

Meeting Minutes

TC 9.9 Building Commissioning

Boston Marriott
29 June, 1997

The meeting was called to order at 3:02 P.M.

Voting Information from TC 9.9 Chairman - David Butler

Voting Members: 10 (Bob Hadden is not included since he has resigned)

Quorum: 50% or more (5 minimum)

Votes on approval of Work Statements, Research Proposals, and matters related to Standards and Guidelines require:

- Affirmative votes by $2/3$ members present and more than 50% of total number of voting members $2/3 \times 8 = 6$. Include results with explanation of negative votes and abstentions recorded in minutes.

Votes on other motions require affirmative vote of more than $1/2$ of voting members present.

Miscellaneous:

- Biographical forms are needed for liaison to SSPC's.
- Statement of Inclinations, Interests, Affiliations for all liaisons.
- Sub-committee assignment for TC 9.9 (list passed around indicating preference).

Review of Action Items (AI) Status For 1/97:

Action Item	Status and Action
AI #1 - 1/97	Complete George Hightower provided the necessary background information for the Research Item #2.
AI #2 - 1/97	Complete Carl Lawson, via Christie Kjellman, provided a draft Research Plan to the Subcommittee.
AI #3 - 1/97	Open David Shipley will meet with Mike Brandemuehl (TC 4.6 Chair) for Items 6 and 8 on the Research Agenda. Mike is very interested in doing the work with us.

- AI #4** - Complete
1/97 The meeting room request has been completed.
- AI #5** - Complete
1/97 Gerry Kettler has been nominated to serve as a Standards Liaison. This nomination will be voted on at this Annual Meeting.
- AI #6** - Complete
1/97 Rodney Lewis accepted the nomination to serve as Liaison to TC 9.7.
- AI #7** - Complete
1/97 The Liaison nomination to Standard 90.2 will be voted on at this Annual Meeting.
- AI #8** - Complete
1/97 The roster was submitted.
- AI #9** - Open
1/97 This item is still open. David Bulter needs to assign a Journal Liaison from this committee.
- AI #10** Complete
- 1/97 David Bevirt was appointed as chair. Four others are needed to serve on this Standards Subcommittee.
- AI #11** Complete
- 1/97 No problem exists with this appointment. Voting will occur later today.
- AI #12** Complete
- 1/97 Item considered complete. It is too premature given the recent release of this Guideline.

MOTION NO. 1

The January 26, 1997 Meeting Minutes distributed by Christie Kjellman were approved by the Committee (Kettler/Lawson) (8/0/0).

HANDBOOK CHAPTER - Dave Bevirt

The Handbook Subcommittee meeting was held on 6/28/97 with six people in attendance. A partial review was made of the first draft (26 pages) of the Commissioning Chapter for the Handbook as prepared by David Bevirt. Committee members submitted mark-ups. The draft was a combination of GPC-1 and existing Handbook Chapter. No action was taken.

- AI #1** - An updated draft of the chapter will be sent on disk and hard copy of each subcommittee member by David Bevirt (second draft).
6/97
- AI#2** - David Bevirt will provide a third revision draft at the San Francisco meeting for full committee review.
6/97

MOTION NO. 2

The committee voted to accept the Handbook Committee Report (Kjellman/Trueman) (8/0/0).

PROGRAMS - Wayne Dunn

All programs were shifted ahead one meeting as indicated on the newly submitted committee report since they were not scheduled by Society for the Boston meeting. See Attachment A for the planned programs.

MOTION NO. 3

The committee voted to accept the Program Committee Report (Lewis/Kettler) (8/0/0).

RESEARCH - Kathie Radke

Meeting Attendees: Harvey Brickman, James Gartner, Walter Gronozik, Eli Howard, Christie Kjellman, Ken Peet, John Phelan, Kathie Radke, Dave Shipley, Sriram Somasundaram, and Cedric Trueman.

The research subcommittee reviewed and discussed a full list of ten research topics and worked to bring them forward as Research Plans or Work Statements. The five following items were chosen and prioritized for submission to R&T for review:

1. "Identification and preservation of building design and commissioning information", co-sponsored with TC 1.5 (their lead).
2. "The building and energy management system's role in commissioning of HVAC systems", co-sponsored with TC 1.4 (our lead).
3. "Identification of ideal monitoring data points for commissioning support during HVAC design", co-sponsored with TC 1.4 and TC 4.6 (our lead).
4. "The impact of commissioning HVAC systems on life cycle costs", co-sponsored with TC 1.8 and TC 1.7 (our lead).
5. "Diagnostic tools for maintenance, operating and commissioning cost optimization", co-sponsored with TC 1.8 (lead?).

Eli Howard volunteered to serve on the Project Monitoring Subcommittee for the first research project, "Identification and preservation of building design and commissioning information" if it is selected for funding by ASHRAE R&T.

The prioritized list of research project topics and the full list of topics for TC 9.9 can be found in Attachment B along with the Research Plans and Work Statements in their most recent form.

Research Plans are due to Research and Technology Committee by August 1, 1997.

Harvey Brickman is now the Research Liaison for Section 9 for the Research Advisory Committee (RAC). Society has recently changed the structure; R&T used to be one committee, but due to the large work load, it has been split into two areas titled Research Advisory Committee (RAC) and Technical Advisory

Committee (TAC).

- AI #3 - 6/97** - Kathie Radke will submit the one page cover sheet for Research projects to Society. Other people must submit their paperwork to Kathie by noon on Tuesday, July 1, 1997.

MOTION NO. 4

David Bevirt moved and Joe Scolaro seconded a motion to accept the research project rankings as suggested by the Research subcommittee so that they can be forwarded to the R&T Manager and Section Head before the August 1 deadline (8/0/0). Background: The subcommittee met on 6/28/97 for more than two hours to discuss, modify, and rank the research project concepts.

MOTION NO. 5

The committee approved the Work Statement for Identification and Preservation of Building Design and Commissioning Information (Dunn/Bevirt) (8/0/0). This Work Statement is co-sponsored by TC 1.5 and was placed as the highest priority from the Research subcommittee.

MOTION NO. 6

The committee voted to accept the Research Committee Report (Bevirt/Scolaro) (8/0/0).

LONG RANGE PLANNING - Carl Lawson

Five items have been set forward as long-term planning goals as seen in the Philadelphia, Pennsylvania January 26, 1997 TC 9.9 Minutes.

One of the goals in Commissioning Certification. PECEI may be an organization which can provide certification if ASHRAE doesn't compile a group themselves.

The next meeting will be on Saturday, January 17, 1998 in San Francisco and everyone is invited to attend.

MOTION NO. 7

The committee voted to accept the Long Range Planning subcommittee report (Lewis/Kettler) (8/0/0).

MOTION NO. 8

It was moved and seconded to add a Forum on Commissioning Certification for San Francisco (Kettler/Lewis) (8/0/0). It will be co-sponsored by TC 9.1 and 9.7. Potential speakers are Harvey Brickman, Rodney Lewis, and Richard Tyler.

- AI #4 - 6/97** - Carl Lawson will contact Richard Tyler to be a speaker. Each TC will be represented at the forum.

MEMBERSHIP - Elia Sterling

Currently this TC has 14 voting members and 29 corresponding members. Each

attendee was asked to sign-in on either the member's list or the visitor's list.

Membership is changed once per year. Let Elia Sterling know if you are interested in being involved in the TC. A biographical form needs to be filled out and submitted to Society. All current members must update their biographical record if any changes are in order.

MOTION NO. 9

The committee approved the Membership Report (Bevirt/Dunn) (8/0/0).

STANDARDS - David Bevirt

Standard 62 is now being split into 62.1 and 62.2. A new committee is being formed for residential, it will be called 62.2. The residential sector felt they weren't being listened to.

The committee voted to accept the Standards Report (Kettler/Trueman) (7/0/0) (Lewis left for vote).

LIAISON REPORTS

SSPC 62R (Ventilation for Acceptable IAQ) - Elia Sterling

All of the draft review comments have been entered into a database (nearly 9,000). Each comment will not be responded to. Please see Attachment C for further details.

In September a new Standard 62R will be issued.

SSPC 90.1 (Energy Efficient Design of New Buildings) - Wayne Dunn

The committee is working to respond to comments. They are considering publishing a second review draft.

SPC 111 (Test and Balance for HVAC & R Systems) - Gerry Kettler

The committee did not meet at the Boston meeting.

The draft standard revision has been completed and voted out for public review. The review is expected some time in late 1997.

SPC 129P (Method of Testing Air Change Effectiveness) - Christie Kjellman for Ted Cohen

The Standard has been approved, but it is not yet out for publication. The committee's work is essentially finished.

G10P (Criteria For Achieving Acceptable Indoor Environment) - Gerry Kettler

The committee met on Sunday, June 29, 1997 for four hours.

Draft number nine of the Guideline was discussed. This draft includes revisions

to data tables from previous issues, and revisions to relationship research.

As at the last meeting, the discussion involved the differences in committee member approaches to the need for data tables and research orientation. Suggestions were made to again rearrange the Guideline index and sequence of information. The one design engineer on the committee wants usable data in the Guideline. The researchers want relationship data. Present Guideline sections include: definitions of environmental criteria, functional aspects of acceptable indoor environments, criteria for indoor environments, and extensive appendices containing research data. No schedule for public review was set.

GPC 11P (MOT for Building HVAC Control Systems) - Gerry Kettler

The committee met on Friday evening, June 27, 1997.

The overall organization of the Guideline has been completed. The major sections include: general format, device testing - water and air, system testing, sequence of operation, problem solving, and documentation. The committee assignments were reviewed along with completed work to date. A format for the section input has been developed and supplied to committee members for device testing. System testing format will be supplied within a few months. The intent is to provide a Guideline that is usable by field level technicians, and provides requirements for design of testable device and system installations.

Information will be exchanged during the next few months. Hopefully the Guideline can be ready for public review by late 1998. Additional members still are welcome.

GPC 13P (Specifying Direct Digital Control Systems) - Gerry Kettler

The committee met on Friday evening, June 27, 1997.

The overall organization of the Guideline has been completed. The major sections include: general format, device testing - water and air, system testing, sequence of operation, problem solving, and documentation. The committee assignments were reviewed along with completed work-to-date. A format for the section input has been developed and supplied to committee members for device testing. System testing format will be supplied within a few months. The intent is to provide a Guideline that is usable by field level technicians, and provides requirements for design of testable device and system installations.

Information will be exchanged during the next few months. Hopefully the Guideline can be ready for public review by late 1998. Additional members still are welcome.

TC 1.7 (Operations & Maintenance Management) - Kathie Radke

TC 9.9 members asked if TC 1.7 members can provide specific requirements with regard to documentation at the conclusion of commissioning. TC 1.7

responded that their activities with Guideline 4 address that need directly. Brian O'Donnell is the point-of-contact on TC 1.7 leading the work on Guideline 4. A seminar on case studies in building effective O&M documentation was suggested for Toronto. It was discussed that this topic and IAQ share common ground between the two TCs.

TC 1.7 is interested in the work that TC 9.9 is doing with "Total Building Commissioning" and would like to investigate what impact it could have on "Total Building Operations and Maintenance." This is another area for future collaboration on programs and research ideas.

TC 1.8 (Owning and Operating Costs) - Christie Kjellman for Barry Bridges

The Handbook Chapter 33 has now been marked-up to include some references to commissioning. Some research is needed to quantify the costs and benefits of commissioning for inclusion in this chapter.

TC 9.1 (Large Building Air Conditioning Systems) and TC 9.8 (Large Building Air Conditioning Applications) - Joe Sclaro

A new chapter on museums is going out.

The primary effort between these committees and TC 9.9 has been, and will continue to be, the co-sponsorship of symposiums, seminars, and forums. This dialogue will be kept open and will hopefully remain fruitful.

The TC 9.8 meeting had a discussion on how to deal with SSPC 62R.

TC 9.1 and 9.8 would like to co-sponsor a symposium for Toronto on "Systems for Humidity Control in Museums." Other opportunities for TC 9.1 may be a seminar for

Chicago on "Demand based Ventilation - Similar to CO2."

TC 9.1 has developed a sub-committee for central plants.

TC 9.8 had discussions on the continued Handbook revisions for Chapters 2, 3, 5, and 6.

TC 9.8 organized seven possible research projects.

ASHRAE has funded the development of a Hospital Design Manual.

Proposed Guideline on Total Building Commissioning - Carl Lawson

The Chair will be a voting member of the committee. Each committee chair will be in charge of their sub-committee. Each sub-committee can have many members. Special facilities groups (hospitals, jails, etc.) will also be added. Richard Wright gave an overview at the meeting for joint sponsorship. Fire

committees may have five sub-committees, as will Structural people. Provide Mike King with a business card if you are interested in reviewing the commissioning specifications. It will be a monumental task and very time consuming to serve on this committee. The guideline would like to be issued in three years. Special funding is being solicited. Some people have already volunteered to donate funding for sponsoring meetings.

Attachment D includes Minutes of the June 28, 1997 Proposed Total Building Commissioning Guideline Committee Meeting. Attachment D includes an Attachment A of D which was the original proposed Title, Purpose, and Scope, and an Attachment B of D which was the revised Title, Purpose, and Scope presented and voted on at the full TC 9.9 committee meeting. The revised Title, Purpose, and Scope was modified in **MOTION NO. 13**. Motion 13 is included in Attachment D (Trueman/Sullivan) (8/0/0).

MOTION NO. 10

The committee approved the Total Building Commissioning Report (Kettler/Scolaro) (8/0/0).

GPC 1, 11, 4, 5 may all be rolled into this document.

GPC 4, 5, 11 have already been agreeable to a combined effort. GPC's 4 and 5 have already been developed.

OLD BUSINESS

Journal - Carl Lawson

New Author's Guides are now available. The February and November issues will include commissioning articles. Authors receive a \$100 certificate to the ASHRAE bookstore.

Fred Turner will now be in charge of the Journal. The Journal wants to improve the quality of the articles. They are considering hiring a part-time artist for graphics, etc. All articles still need to be submitted in ready-to-print quality, if at all possible. Authors must also include metric units. Articles are needed.

A volunteer(s) is needed as the Journal Liaison. The Liaison will solicit articles. Ken Peet volunteered as the Journal Liaison. Additionally, both Mike King and Larry Fisher volunteered to write articles.

AI #5 - Wayne Dunn submitted an article six months ago and hasn't heard anything yet.
6/97 Carl Lawson will find out the status of Dunn's submittal.

The new members selected to serve on the Standards Sub-committee are: Jack Twa, Janice Peterson, Gerry Kettler, Elia Sterling, and Eli Howard. All people listed have accepted the position with the exception of Jack Twa and Janice Peterson, which are pending.

AI #6 - David Bevirt, as the committee chair, will contact them for their confirmation.
6/97

MOTION NO. 11

The committee voted to appoint Cedric Trueman as the SSPC 90.1 Liaison (Lawson/Kettler) (6/0/1 - Trueman).

MOTION NO. 12

The committee voted to appoint Walter Grondzik as the SSPC 90.2 Liaison (Dunn/Bevirt) (7/0/0).

MOTION NO. 14

The committee voted to appoint Rodney Lewis as the TC 9.7 Liaison (Dunn/Bevirt) (7/0/0).

NEW BUSINESS

ASHRAE has funded the development of a Hospital Design Manual.

David Butler distributed a committee interest list for visitors. You are not required to be a member to serve on sub-committees, anyone can participate.

MOTION NO. 15

It was suggested TC 9.9 appoint a liaison to TC 1.4. Larry Fisher was appointed as

TC 1.4 Liaison by the committee (Kettler/Trueman) (7/0/0).

The U.S. Green Building Council has existed for approximately five years. The council has developed a Manual for Sustainable Buildings which includes a chapter on Building Commissioning (Chapter 15). See Attachment E for the complete chapter. Gerry Kettler provided this information to the TC.

In order to obtain a "green certification" the building needs to be commissioned. Three levels of classifications exist: bronze, silver, and gold.

AI Status for open projects:

Action Item	Responsible Party	Status
AI #3 - 1/97	David Shipley	Open
AI #9 - 1/97	Dave Butler	Open
AI #1 - 6/97	David Bevirt	Open
AI #2 -	David Bevirt	Open

6/97

AI #3 - Kathie Radke Open
6/97

AI #4 - Carl Lawson Open
6/97

AI #5 - Carl Lawson Open
6/97

AI #6 - David Bevirt Open
6/97

MOTION NO. 16

The committee unanimously voted to adjourn the meeting at 5:45 p.m. (8/0/0).

By: Christie R. Kjellman, CEM, CDSM
Secretary to TC 9.9

Attachments not provided as links were distributed to committee members in hard copy form by ASHRAE.