



Shaping Tomorrow's
Built Environment Today

MINUTES

Refrigeration Committee (REF)

June 28, 2015

Atlanta Hilton

Atlanta, GA

MEMBERS PRESENT:

Christopher Seeton, *Chair*
Matt Ritter, *Vice Chair*
Roberto Aguilo
Karim Amrane
Bryan Becker
Ray Cole
Georgi Kazachki
Julia Keen, *BOD Ex-O*
Javier Korenko
Cesar Lim, *Consultant, CTTC liaison*
Bjarne Olesen, *Coordinating Officer*
Jason Robbins
Richard Royal, *Consultant*
Nick Shockley
Arvind Surange

GUESTS:

Jim Caylor
Walid Chakroun
Martin Dieryckx, *Incoming Member*
Brian Fricke
Bruce Griffith
Rainer Jakobs
Corey Metzger
Shamila Nair-Bedouelle, *Incoming Member*
Kimberly Pierson
Dave Rule, *Incoming Member*
David Underwood

ASHRAE STAFF:

Steve Hammerling, *AMORTS*

MEMBERS NOT PRESENT:

Mark Cambria

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MOTIONS PASSED

No.	Motion
1	the minutes from the REF Winter Meeting in Chicago be approved.
2	REF approve the changes to the REF Reference Manual shown
3	REF approve amendments to Reference Manual changes shown
4	that REF approve the MOP changes as shown in attachment
5	REF recommend that Aguilo, Lim, and Surange participate on steering committee for a ASHRAE specialty conference on fisheries
6	the REF sponsor a seminar titled <i>Highlights from the 24th IIR Congress of Refrigeration</i>
7	the REF sponsor a seminar titled <i>Best Practices in Manufacturing, Field Installation, and Servicing Refrigeration & AC Systems</i>
8	the REF co-sponsor a seminar titled <i>Compression Challenges for Low GWP refrigerants</i>
9	the REF co-sponsor a conference paper session for STL titled <i>Design and Performance of Vapor-Compression Systems with higher glide, lower GWP refrigerants</i>
10	REF recommend to BOD to approve resources for SSPC 15 to meet more frequently to facilitate quicker developments.

ACTION ITEMS – Annual 2015

No.	Responsibility	Action Item	Page
1	Staff	Staff was asked to send new Award procedures to Honors and Awards for their information	2
2	Staff	Staff will forward names interested in Fisheries conference to CEC chair (Walid Chakroun) and Steve Comstock	2
3	Shockley / Robbins	Develop ALI course proposals on topics within their area of expertise	3
4	Cole	Visit TCs 3.3, 8.1 and 10.7 to invite them to cosponsor and participate in program titled <i>Best Practices in Manufacturing, Field Installation, and Servicing Refrigeration & AC Systems</i>	4
5	Staff	send reminder requests to assigned individuals for TC hot issue reports	5
6	Staff	Send D. Rule the current Ammonia PD TPS, relevant documents and background material	6
7	Becker	Reach out to Hershey contact to find R42 reviewer	6
8	Staff	Send Shockley ASHRAE COF contact(s) for handbook review	6
9	Staff	Communicate results of REF's Award review and to suggest resubmission if issues identified by committee could be addressed	7
10	Staff	Compile eligible Briley articles after meeting and send to judging panel	7

ACTION ITEMS – Winter 2015

No.	Responsibility	Action Item	Status
CH-1	Ritter, Seeton	Contact Ledford, Marshall on staff to help organize event for Atlanta meeting	Complete
CH-2	Robbins, Ritter, Becker	Review MOP to include subcommittees and subcommittee responsibilities for REF's spring meeting	Complete
CH-3	Kazachki	Formally submit Atlanta programs by deadline	Complete
CH-4	Surange	Look into paper session for Orlando on low charge ammonia systems with Korenko, Robbins as authors	Complete
CH-5	REF	Contact assigned TC's on burning issues and report back to REF with 1-2 sentence summary report	Complete
CH-6	REF	Review and offer questions and comments on the 2015-2016 Work Plan of ASHRAE-UNEP Global Cooperation Agreement	Complete
CH-7	Staff	Send the PD committee roster requirements and appropriate forms to Seeton	Complete
CH-8	Staff	Send the link to ASHRAExchange for REF to review and participate	Complete
CH-9	Staff	Re-explore idea for a REF Facebook page	Complete
CH-10	Seeton	Send link to refrigeration issues being discussed on LinkedIn page	Complete
CH-11	Staff	Include noted on Awards deadlines in Insights and the Members 1st Newsletter	Complete
CH-12	Robbins, Seeton	Review the current Award procedures to determine if improvements can be made	Complete

LIST OF ATTACHMENTS

No.	Attachment
A	Reference Manual Changes
B	Reference Manual Changes with amendments
C	MOP changes
D	REF Regulatory Update
E	2014-15 MBOs
F	2015-16 MBOs

LIST OF ACRONYMS

AHRI	Air-conditioning, Heating & Refrigeration Institute	MOP	Manual of Procedures
ALI	ASHRAE Learning Institute	MTG	Multi-disciplinary Task Group
AMORTS	Assistant Manager Research & Technical Services		
BOD	Board of Directors	ODS	Ozone Depleting Substances
CEC	Conferences & Exposition Committee	PEAC	Presidential Elect Advisory Council
CNV	Chair Not Voting	PD	Position Document
CO	Coordinating Officer	PMS	Project Monitoring Subcommittee
COF	College of Fellows	REF	Refrigeration Committee
CRC	Chapters Regional Conference	ROB	Rules of the Board
CTTC	Chapter Technology Transfer Committee	RP	Research Project
DL	Distinguished Lecturer	SLCP	Short-Lived Climate Pollutants
EPA	Environmental Protection Agency	SNAP	Significant New Alternatives Policy
Ex-O	Ex-Officio	SSPC	Standing Standard Project Committee
GCCA	Global Cold Chain Alliance	TC	Technical Committee
GRMI	Global Refrigerant Management Initiative	TEAP	Technical and Economic Assessment Panel
GWP	Global Warming Potential	TEWI	Total Environmental Warming Impact
HCFC	Hydrochlorofluorocarbon	TPS	Title, Purpose and Scope
HFC	Hydrofluorocarbon	UNEP	United Nations Environment Programme
IAQA	Indoor Air Quality Association	UNESCO	United Nations Educational, Scientific and Cultural Organization
IAR	International Institute of Ammonia Refrigeration	UNFCC	United Nations Framework Convention on Climate Change
IIR	International Institute of Refrigeration	USNC	United States National Committee
MBO	Management by Objectives	YEA	Young Engineers in ASHRAE

1. CALL TO ORDER

Chair Chris Seeton called the meeting to order just after 8:00 AM.

2. ROLL CALL AND INTRODUCTIONS

The Chair welcomed all in attendance. Members and guest introduced themselves.

3. APPROVAL OF MINUTES

It was moved (CL) and seconded (BB) that,

- (1) the minutes from the REF Winter Meeting in Chicago be approved.

MOTION 1 PASSED: 10-0-1, CNV

BACKGROUND: Minutes were distributed in Feb. 19th email.

4. REVIEW OF AGENDA

Will discuss a possible ASHRAE conference related to fisheries under 6.3 - Other.

5. CHAIR'S REPORT

5.1 Motions from Past Meetings Requiring Higher Body Approval

No motions from past meetings needed higher approval. Seeton anticipates a number of motions here today.

5.2 New Information Items for REF

Seeton reminded all of YEA mixer co-sponsored by REF for 4-6 PM tonight. Asked all to attend and represent Refrigeration Committee. Goal to get YEA members aware of involved with TCs and refrigeration organizations.

6. VICE-CHAIR'S REPORT

6.1 Fiscal Report

REF cosponsored YEA Mixer in Atlanta to promote REF and refrigeration activities in ASHRAE.

Noted makeup of REF next year was much more international so we may see a spike in transportation budget. There are no other program proposals with a fiscal impact at this time.

6.2 Rules of the Board (ROB), Manual of Procedures (MOP), Reference Manual

Various task groups developed markups to the award procedures in the Reference Manual as well as changes to the MOP on subcommittees. They were sent to REF with the agenda for review.

It was moved (JR) and seconded (RA) that,

- (2) REF approve the changes to the REF Reference Manual shown. **(Attachment A)**.

BACKGROUND: Duplications in the procedures were removed, forms simplified and shortened when possible to shorten the documents and streamline the procedure. There is now a single form and users check the appropriate award they're applying for. The end goal is to help generate more submissions for the Milt Garland and Comfort Cooling Awards.

MOTION 2 PASSED: 10-0-0, CNV

After approving changes, there were concerns over having chapters judge the nominations to approve a single nominee to REF. It was noted this complicates the process and may limit total nominations. REF decided changes should be made to allow direct submissions to REF.

It was moved (MR) and seconded (JR) that,

(3) REF approve amendments to Reference Manual changes shown (**Attachment B**).

BACKGROUND: These changes do not preclude chapter submissions but they no longer require judging by the chapter. Other changes were made to the startup date and scope to be eligible for the Comfort Cooling Award. The aim is to field more nominations.

MOTION 3 PASSED: 10-0-0 CNV

Staff was asked to send new procedures for Milton Garland and Comfort Cooling Awards to Honors and Awards committee for their information (**AI #1**).

It was moved (KA) and seconded (JR),

(4) that REF approve the MOP changes as shown. (**Attachment C**)

BACKGROUND: A section is added formalize the subcommittee formation process and to add some REF subcommittees (Awards, Handbook, ALI, Research, etc.). MBOs will expand upon the roles and functions of these subcommittees.

MOTION 4 PASSED: 10-0-0 CNV

6.3 Other

Ritter summarized a proposal for a specialty conference related to fisheries and the seafood industries that would be cosponsored by IIR and UNEP. ASHRAE had done something similar 30 years ago with IIR and asked REF if there would be interest in a new fisheries/marine conference. Members expressed general support especially with focus on refrigeration and global food chain issues. If ASHRAE goes forward Conference and Expositions Committee (CEC) would establish a steering committee and may seek REF representation.

It was moved (MR) and seconded (NS), that

(5) REF recommend Aguilo, Lim, and Surange for participation on steering committee for a ASHRAE specialty conference related to fisheries

MOTION 5 PASSES 11-0-0 CV

Staff will forward names to CEC chair (Walid Chakroun) and Steve Comstock on behalf of REF (**AI #2**).

7. OTHER REPORTS

7.1 BOD Ex-Officio / Coordinating Officer Report

Keen thanked all for their work and efforts and presented a Presidential Elect Advisory Committee (PEAC) report. Highlights include:

- IAQA hiring staff, changing to match ASHRAE's Society Year and meet in parallel
- Presidential Ad Hocs on:
 - Centralized Training at CRCs

- Effective Use of Volunteer Time
- Residential Market
- Building Performance Alliance

Ad Hoc reports can be made available upon request.

Coordinating Officer Olesen attended the REF ExCom meeting in morning. He thanked REF for their work over the Society Year.

7.2 Chapter Technology Transfer Committee (CTTC) Liaison Report

Lim attended CTTC meetings in Atlanta and summarized his report to CTTC. (This report was sent ahead of meeting with REF agenda). CTTC chair Corey Metzger thanked REF for work and assistance to CTTC..

7.3 Consultant Report (Royal)

7.3.1 RP-1634 - Guide for Sustainable Refrigerated Facilities and Refrigeration Systems

Royal noted the research is progressing. Many well developed chapter drafts are complete. The PMS has met for conference calls and is meeting at Atlanta meeting. Funding for the UNEP portion of the guide was withdrawn.

7.3.2 Refrigeration Educational Course

Royal reported he is working with professional development committee on developing course proposal. The Professional Development committee meets tomorrow morning.

Royal asked if there was interest amongst members to write refrigeration related course proposals. Shockley and Robbins volunteered to participate provided courses were within their area of expertise (**AI #3**). Keen suggested formal proposal (outline) for each 1 hour course. Need market analysis and business plan as part of proposal.

7.4 Programs

7.4.1 Atlanta program

Kazachki noted the seminar on '*Retrofit or not? Life cycle strategy for systems with R-22 and high GWP refrigerants*' was approved by CEC and it will take place Wednesday July 1 (11:00 AM – 12:30 PM). Kazachki invited all to attend. The REF seminar on '*Best practices in manufacturing, field installation and servicing refrigeration and air conditioning systems*' was not approved by CEC.

7.4.2 Orlando program

REF discussed a number of programs for future meetings.

It was moved (GK) and seconded (KA) that,

(6) REF sponsor a seminar titled *Highlights from the 24th IIR Congress of Refrigeration*.

BACKGROUND: The USNC/IIR (US National Council of IIR) is approaching the ASHRAE REF to be the lead sponsor of this seminar. It has sought co-sponsorship also by TC1.3, TC 2.5, TC 3.1, TC8.11 and TC10.7.

MOTION 6 PASSED 9-0-0 CNV

It was moved (GK) and seconded (KA) that,

- (7) REF sponsor a seminar titled *Best Practices in Manufacturing, Field Installation, and Servicing Refrigeration & AC Systems*

BACKGROUND: The seminar is cosponsored by TC3.3, TC8.1, and TC10.7.

MOTION 7 PASSED 10-0-0 CNV

Cole agrees to visit these TCs to invite them to cosponsor and participate (**AI #4**).

It was moved (GK) and seconded (NS) that,

- (8) REF co-sponsor a seminar titled *Compression Challenges for Low GWP refrigerants*

BACKGROUND: The seminar is sponsored by TC 8.1

MOTION 8 PASSED 10-0-0 CNV

It was moved (GK) and seconded (KA) that,

- (9) REF co-sponsor a conference paper session for STL titled *Design and Performance of Vapor-Compression Systems with higher glide, lower GWP refrigerants*.

MOTION 9 PASSED 10-0-0 CNV

BACKGROUND: The session is sponsored by MTG.LowGWP.

7.5 Developing Economies Ad-Hoc

Lim referred to the final report emailed (with agenda) prior to meeting. The ad hoc final report was submitted to BOD for them to consider recommendations for action. The Cold Chain and Food Chain Subcommittee made the following recommendations:

- ASHRAE should brief Developing Economies chapters/members in the replacement of HCFC, which began on January 1, 2015 and would be substantially phased out by end of 2030. This could be best achieved through the Distinguished Lecturers (DL) Program. This would include training on environmental and safety concerns of alternative refrigerants which is important especially for flammable refrigerants. Also, ASHRAE should suggest on the cost effective refrigerant replacement for the various HCFC Refrigerants. ASHRAE may take assistance of the UNEP ODS Desk in Paris to fund these lectures on HCFC Phase out.
- ASHRAE should guide the Developing Economies in the Phase Down of the HFC Refrigerants and advise their efficient replacement in terms of TEWI and carbon footprint. ASHRAE can use available resources such as TEAP reports under the Montreal Protocol, other tools and workshops. ASHRAE should promote the use of secondary refrigerant especially for supermarket refrigeration in order to reduce the refrigerant charge of gases with high GWP.
- As a supporter of newly formed GRMI, ASHRAE to help disseminate the information to the Developing Economies chapters and members which could be funded by World Bank Funded through their various grants.

7.6 Liaisons

7.6.1 Technical Committees (TCs)

Seeton asked all to continue reports on Atlanta meeting as assigned below. A summary of reports from Chicago meeting was sent with agenda.

- TC 1.3 - ask TC chair to send quick note
- TC 3.1 - Seeton
- TC 3.8 - Ritter
- TC 8.1 - Kazachki
- TC 8.2 - Amrane
- TC 8.3 - Cole
- TC 8.5 - ask TC chair to send quick note
- TC 8.9 - Seeton or email chair
- TC 10.1 - Cole
- TC 10.2 - Cole
- TC 10.3 - Robbins
- TC 10.5 - Cole
- TC 10.6 - Becker
- TC 10.7 - Lim
- TC 10.8 - Seeton
- USNC/IIR – Amrane
- Standard 15 - Amrane
- Standard 34 – Seeton

Staff will send reminder requests to assigned individuals after the meeting (**AI #5**). Seeking 2-4 sentence reports on hot topics or topics TC is dealing with that REF can help with.

7.6.2 Outside ASHRAE

Ritter encouraged members participating with other refrigeration related organizations and societies outside of ASHRAE to report on activities that may be of interest to ASHRAE members at future REF meetings. REF next year will have members with IIR, UNEP, IIR, AHRI and UNEP. It's a great opportunity to get involved in their activities and vice-versa.

7.6.2 IIR

IIR Director Didier Coloumb is an incoming member of REF. He was asked in Chicago to bring forth proposal for US and/or ASHRAE membership in IIR if desired. Coloumb indicated he'd attend Orlando meeting.

7.6.3 UNEP

REF remains supportive of the 2015-2016 Work Plan of ASHRAE-UNEP Global Cooperation Agreement. A number of objectives will need REF participation including refrigerant management, energy efficiency in buildings, DL program. REF now has an MBO focused on the implementation of UNEP partnership goals. Incoming REF member Nair-Bedouelle is with UNEP and last met with ASHRAE in May.

7.6.4 GCCA liaison report

ASHRAE's liaison to GCCA, Ron Vallort submitted his report to REF. This was sent to REF with the agenda for the REF meeting.

7.7 Position Document (PD) updates

Members Cole, Kazacki, Royal, Shockley and Rule had volunteered for committee to revise the *Ammonia as a Refrigerant* PD. Rule was asked to lead effort. A formal proposal with title, purpose and scope (TPS) is needed to proceed with revision. Staff was asked to send Rule the current PD, TPS, relevant procedures and background material to get him up to speed (**AI #6**).

7.8 Refrigeration Handbook Chapters

Shockley reported that Don Fenton had volunteered to the Refrigeration Volume chapters reviewed through the Scientific Advisory Council of the Global Cold Chain Alliance (GCCA). Most have been reviewed except Chapter R42, Chocolates, Candies, Nuts, Dried Fruits, and Dried Vegetables. This chapter was last updated in 1986 and many references are even older. Becker noted someone at Hershey used to contribute to chapter. Becker agreed to find and reach out to this contact (**AI #7**). The College of Fellows (COF) was also suggested as possible review resource. Staff will send Shockley COF contacts (**AI #8**).

7.9 Refrigerant Issues Update

Ritter presented a REF Regulatory Update (**Attachment D**). Highlights from the presentation include:

- Several new HFC amendments proposals to Montreal Protocol
- United Nations Framework Convention on Climate Change (UNFCCC) – Aim for written agreement by end of 2015 for 2020 implementation
- New SNAP rules at EPA – final listing rule for new materials/applications and removing some other materials/listings
- Summary of California actions– above and beyond EPA programs. Introduced short-lived climate pollutants (SLCP) concept paper and refrigerant management.

7.10 Global Refrigerant Management Initiative (GRMI)

The GRMI charter was sent to REF with the agenda for the meeting. The primary purpose of program will be to improve global education, training and certification of the service industry associated with air conditioning and refrigeration industries. A list of organizations that have indicated a willingness to participate as members has been compiled. Next meeting will be July 23, 2015 at UNESCO to discuss bylaws, fee structures, invites to steering committee and membership. They'll meet this fall and at ASHRAE Winter meeting in Orlando.

7.11 Other

There was discussion related to SSPC 15 and issues they are faced with. It was asked if they have the resources to move as fast as the industry is moving with refrigerants. There is concern that the industry may not rely on ASHRAE Standard 15 if they cannot keep up with the market developments.

It was moved (KA) and seconded (RA) that,

- (10) REF recommend to BOD to approve resources for SSPC 15 to meet more frequently to facilitate quicker developments.

BACKGROUND: Meeting more would allow the SSPC and ASHRAE Standard 15 to facilitate quicker developments to more adequately address and respond to the needs in a more frequently changing refrigeration industry. Revision to Standard 15 should be expedited to accommodate 2L safety classification of refrigerants.

MOTION 10 PASSED: 10-0-0 CNV

Karim Amrane will be recommended to be considered as REF's formal liaison to SSPC 15.

8. 2014-15 Management by Objectives (MBOs)

Seeton discussed the current MBOs. He will present final report on MBOs (**Attachment E**) to Technology Council.

9. Awards

9.1 Milt Garland & Comfort Cooling Award

REF went into executive session to discuss award nominations. REF reviewed one nomination each for the Milton Garland Award and Comfort Cooling Award but did not approve a winner. Staff was asked to communicate results to award nominees and to suggest resubmission if issues identified by committee could be addressed (**AI #9**).

Earlier in the meeting REF approved changes to Reference Manual intended to simplify the nomination process and to hopefully receive more nominations going forward. Ritter noted Andy Pearson is writing a historical Journal article on Milt Garland to appear in January or February that will also help publicize award nominations before May 1 deadline.

9.2 George Briley Award

Staff will compile eligible articles after meeting and send to judging panel (**AI #10**).

10. Next Meeting

A poll for fall meeting(s) will be sent after meeting via email. REF will meeting at ASHRAE Winter Meeting in Orlando on Sunday, January 24, 2016 from 8a-12pm.

11. Handover to New Chair

Seeton thanked outgoing members Mark Cambria, Ray Cole, Georgi Kazachki and Arvind Surange for their service and presented them with certificates of appreciation.

Seeton then recognized Matt Ritter as incoming chair. Ritter acknowledged incoming members Coulumb, Dieryckx, Nair-Bedouelle and Rule.

Ritter asked for those with an interest in participating on a specific subcommittee to contact him directly. He plans to assign subcommittees to each MBOs for next year. 2015-2016 REF (**Attachment F**) will be reported to Technology Council. Ritter noted MBOs will be discussed on Fall REF meeting and include a bridge to old committee MBOs so the work can be continued.

12. Adjournment

The Refrigeration Committee meeting was adjourned at 12:00 PM. Seeton thanked all for their attendance and participation.

SECTION E ———Milton W. Garland Commemorative Refrigeration Award for Project Excellence

SECTION F ~~Refrigeration~~ Comfort Cooling Award for Project Excellence

Under MOP B4.8, award procedures for Milt Garland & Comfort cooling Awards

- The winning projects selected by the Refrigeration Committee from the Chapter nominees shall receive the following:
 - The designer of the winning project shall receive a plaque at a Society Winter Meeting.
 - The project's owner shall receive a plaque to be presented at a refrigeration program meeting of the chapter.
- Additionally, chapters will receive the following recognitions:
 - The chapter nominating the winning project shall receive a felt patch to go on the chapter award banner. Patch will be presented at the CRC following the Society award presentation.
 - All chapters submitting a nomination shall be awarded ribbons at the following year's CRC.
- Submission Criteria for:
 - Comfort Cooling Award
 - Milton W. Garland Commemorative Refrigeration Award

The awards are open to all who think their projects or other projects with which they are familiar, have achieved some distinction.

- Projects nominations may be prepared by the designers, architects, engineers, owners, or suppliers.
- A member of the project team or the owner must be an ASHRAE member. The nominator must inform and have approval from the owner of the installation that the entry may be published. (The owner's name may be withheld for privacy.) A release to this effect must be obtained from the owner of the project (see Submission Form).
- All projects must be submitted within the thirty-six (36) preceding months of the initial operation date of the system.
- Each Chapter may only have one submittal and may devise their own method(s) for selecting their submission.

Submission Format

- The front cover shall be the applicable Award Submission Form.
- The second page shall contain no more than a two paragraph overview of the project with a brief explanation of the factors supporting the nomination.
- The following pages shall contain a description of the project. The last pages of the submission shall consist of drawings, plans, schematics, or pictures of the project which will give the judges a clear understanding of the merits of the project. This may be the projects construction or as-built documents with added explanation or notes as needed.

Submission Process

- Submissions must be sent by the Chapter President to the Refrigeration Committee Staff Liaison (amorts@ashrae.net) by May 1st to be considered for that year's competition. Chapters should also submit a copy of their submission to Chapter Technology Transfer Committee (CTTC) Regional Vice-Chair (RVC) for informational purposes as well.

Refrigeration Awards Subcommittee – Membership and Responsibilities

The Chair of the Refrigeration Committee shall select three members on the Committee to serve on the Awards Subcommittee.

- The Awards Committee shall develop a brief article calling for award nominations to be published in the Jan/Feb Insights. Develop email blast for distribution to chapters (from CTTC as well as from REF) coordinated by ASHRAE staff.
- The Awards Subcommittee shall judge the awards submissions using the applicable scoring chart in Table 1.
- Scores shall be delivered to the Refrigeration Committee Staff Liaison no later than 14 days prior to the Refrigeration Committee's meeting at the Society annual conference.
- Shortly after the winner is notified, the Awards Subcommittee shall convey the documentation accompanying the nominated and the winning projects to the ASHRAE Journal editor for potential publication.

Staff Liaison Responsibilities

The Refrigeration Committee Staff Liaison shall provide support through the following activities:

- Receive submissions and distribute to the Awards Subcommittee.
- Collect and summarize ratings for review and voting by the full committee at the Society annual meeting.
- Procure all award and recognition materials as shown above for the awards and mail such materials to all recipients not present at the Society meeting.

SECTION E: MILTON W. GARLAND COMMEMORATIVE REFRIGERATION AWARD FOR PROJECT EXCELLENCE

Description

The award shall be known as the Milton W. Garland Commemorative Refrigeration Award for Project Excellence. Refrigeration shall be defined as any use of mechanical refrigeration machinery for application other than human comfort. In general, this will be for food processing and preservation as well as industrial applications. It could also apply to refrigeration used in manufacturing processes, life support in extreme environments, recreational facilities, or other non-comfort cooling applications. The award shall be made to both the designer and the owner of a *non-comfort cooling refrigeration application that incorporates new technology in a unique manner.*

SECTION F: COMFORT COOLING AWARD FOR PROJECT EXCELLENCE

Description

The award shall be known as the Comfort Cooling Award for Project Excellence and will

encourage those studying it to expand their interest in and appreciation for comfort cooling applications. Refrigeration shall be defined as any mechanically produced cooling utilized in a comfort cooling application. The award shall be made to both the designer and the owner of a comfort cooling application which highlights innovation and/or new technologies.

The winning project selected by the Refrigeration Committee from the Chapter nominees shall receive the following:

- ~~The designer of the winning project shall receive a plaque at a Society Winter Meeting.~~
- ~~The project's owner shall receive a plaque to be presented at a refrigeration program meeting of the chapter.~~

Additionally, chapters will receive the following recognitions:

- ~~The chapter nominating the winning project shall receive a felt patch to go on the chapter award banner. Patch will be presented at the CRC following the Society award presentation.~~
- ~~All chapters submitting a nomination shall be awarded ribbons at the following year's CRC.~~

Submission Criteria

The Milton W. Garland Commemorative Refrigeration Award is open to all who think their projects or other projects with which they are familiar, have achieved some distinction.

- ~~Projects nominations may be prepared by the designers, architects, engineers, owners, or suppliers.~~
- ~~There must be an ASHRAE linkage to the nominee (the prime designer is a member, the installer is a member, the firm is Golden Circle, or the owner, supplier, etc., is a member).~~
- ~~The nominator must inform and have approval from the owner of the installation that the entry may be published. (The owner's name may be withheld for privacy.) A release to this effect must be obtained from the owner of the project (see Submission Form).~~
- ~~All projects must be submitted within the thirty-six (36) preceding months of the initial operation date of the system.~~
- ~~Each Chapter may only have one submittal and may devise their own method(s) for selecting their submission.~~

Submission Format

The chapter's eight (8) page submittal shall be as follows:

- ~~The front cover shall be the Milt Garland Award Submission Form.~~
- ~~The second 8 ½ x 11" page shall contain no more than a two paragraph overview of the project with a brief explanation of the factors supporting the nomination.~~
- ~~The next four 8 ½ x 11" pages shall contain a description of the project typed in 12 point font. The page shall be double spaced with ¾" left and right margins, and 1" top and bottom margins.~~
- ~~The last two pages of the project shall consist of two 8 ½ x 11" sheets containing drawings, plans, schematics, or pictures of the project which will give the judges a clear understanding of the merits of the project.~~

Submission Process

~~Submissions must be sent by the Chapter President to the Refrigeration Committee Staff Liaison (amorts@ashrae.net) by May 1st to be considered for that year's competition. Chapters should also submit a copy of their submission to Chapter Technology Transfer Committee (CTTC) Regional Vice Chair (RVC) for informational purposes as well.~~

Refrigeration Awards Subcommittee—Membership and Responsibilities

~~The Chair of the Refrigeration Committee shall select three members who have at least two years of service on the Committee to serve on the Milt Garland and Comfort Cooling Awards Subcommittee.~~

- ~~• The Awards Committee shall develop a brief article calling for award nominations to be published in the Jan/Feb Insights. Develop email blast for distribution to chapters (from CTTC as well as from REF) coordinated by ASHRAE staff.~~
- ~~• The Awards Subcommittee shall judge the Milt W. Garland Commemorative Refrigeration Award submissions using the scoring chart in Table 1.~~
- ~~• Scores shall be delivered to the Refrigeration Committee Staff Liaison no later than 14 days prior to the Refrigeration Committee's meeting at the Society annual conference.~~
- ~~• Shortly after the winner is notified, the Awards Subcommittee shall convey the documentation accompanying the nominated and the winning projects to the ASHRAE *Journal* editor for potential publication.~~

Staff Liaison Responsibilities

~~The Refrigeration Committee Staff Liaison shall provide support through the following activities:~~

- ~~• Receive submissions and distribute to the Awards Subcommittee.~~
- ~~• Collect and summarize ratings for review and voting by the full committee at the Society annual meeting.~~
- ~~• Procure all award and recognition materials as shown above for the Milt Garland Award and mail such materials to all recipients not present at the Society meeting.~~

~~MILTON GARLAND~~ AWARD SUBMISSION FORM**Applying for (Check One)** Milton W. Garland Commemorative Award for Project Excellence Comfort Cooling Award for Project Excellence

1. **Name of building or project:** _____
Location: _____ **Initial Date of Operation:** _____
Chapter Submitting: _____
Has chapter approved nomination? _____
2. **Award Winner** (note person listed here will be official winner of award, receive plaque at Plenary session, get travel reimbursement, etc.)
- Name: _____
Role in project: _____
ASHRAE Membership Number (if applicable): _____
 - Address (including country): _____

 - Office Telephone: _____
 - E-mail address: _____
 - Company: _____
3. **Co-Winner** (if appropriate only. Note there will be only the one official winner but more can be recognized if warranted)
- Name: _____
Role in project: _____
ASHRAE Membership Number (if applicable): _____
 - Address (including country): _____

 - Office Telephone: _____
 - E-mail address: _____
 - Company: _____

(please append additional names if appropriate)
4. **ASHRAE Linkage** (the prime designer is an ASHRAE member, the installer is a member, the firm is Golden Circle, or the owner, supplier, etc., is a member, etc. Note the person listed here does not receive award unless listed above).
- Name: _____

ASHRAE Member Linkage: _____
ASHRAE Membership Number: _____
 - Address (including country): _____

 - Office Telephone: _____
 - E-mail address: _____
 - Company: _____
5. **Owner's release:**
I certify that I am the owner or the authorized representative of this project, and hereby grant permission to ASHRAE to use all the enclosed data and information in the judging and subsequent publicity of this project.
Typed Name:
- Name: _____
 - Title: _____
 - Signature: _____ Date: _____

(Signatures must be on form submitted to ASHRAE)
 - Company: _____
 - Address (including country): _____
 - Office Telephone: _____
 - E-mail address: _____

**TABLE 1: SCORING CHART
FOR**

Milton W. Garland Commemorative Award Comfort Cooling Award
~~MILTON W. GARLAND COMMEMORATIVE REFRIGERATION AWARD~~

		Evaluation Points			
Problem	A1. Complexity of Problem			A. Problem	
				Ext. Difficult	100%
				Very Difficult	75%
	Subtotal: PROBLEM - Maximum 20 Points	Sum =		Difficult	50%
				Not Difficult	30%
Concept	B1. Concept - Maximum 10			B. Concept	
				Superior	100%
	B2. Integrated Design - Maximum 5			Excellent	67%
				Very Good	53%
	B3. Sustainability - Maximum 5			Good	47%
				Fair	33%
	B4. Originality – Maximum 10				
	Subtotal: CONCEPT - Maximum 30 Points	Sum =			
Solution	C1. Performance Criteria Achieved - Maximum 30			C. Solution	
				Superior	100%
	C2. Energy Effectiveness - Maximum 5			Excellent	67%
				Very Good	53%
	C3. Budget Restrictions - Maximum 5			Good	43%
				Fair	33%
	C4. Ease of Maintenance - Maximum 10				
	Subtotal: SOLUTION - Maximum 50 Points	Sum =			
DISCRETIONARY BONUS* - Maximum 10					
GRAND TOTAL					

*Reasoning for Bonus:

SECTION F: REFRIGERATION COMFORT COOLING AWARD FOR PROJECT EXCELLENCE

Description

The award shall be known as the Refrigeration Comfort Cooling Award for Project Excellence and will encourage those studying it to expand their interest in and appreciation for comfort cooling applications. Refrigeration shall be defined as any mechanically produced cooling utilized in a comfort cooling application. The award shall be made to both the designer and the owner of a comfort cooling refrigeration application which highlights innovation and/or new technologies.

The winning project selected by the Refrigeration Committee from the Chapter nominees shall receive the following:

- The designer of the winning project shall receive a plaque at a Society Winter Meeting.
- The project's owner shall receive a plaque to be presented at a refrigeration program meeting of the chapter.

Additionally, chapters will receive the following recognitions:

- The chapter nominating the winning project shall receive a felt patch to go on the chapter award banner. Patch will be presented at the CRC following the Society award presentation.
- All chapters submitting a nomination shall be awarded ribbons at the following year's CRC.

Submission Criteria

The Refrigeration Comfort Cooling Award is open to all who think their projects or other projects with which they are familiar, have achieved some distinction.

- Projects nominations may be prepared by the designers, architects, engineers, owners, or suppliers.
- There must be an ASHRAE linkage to the nominee (the prime designer is a member, the installer is a member, the firm is Golden Circle, or the owner, supplier, etc., is a member).
- The nominator must inform and have approval from the owner of the installation that the entry may be published. (The owner's name may be withheld for privacy.) A release to this effect must be obtained from the owner of the project (see Submission Form).
- All projects must be submitted within the thirty six (36) preceding months of the initial operation date of the system.
- Each Chapter may only have one submittal and may devise their own method(s) for selecting their submission.

Submission Format

The chapter's eight (8) page submittal shall be as follows:

- The front cover shall be the Refrigeration Comfort Cooling Award Submission Form.
- The second 8 ½ x 11" page shall contain no more than a two paragraph overview of the project with a brief explanation of the factors supporting the nomination.
- The next four 8 ½ x 11" pages shall contain a description of the project typed in 12 point font. The page shall be double spaced with ¾" left and right margins, and 1" top and

bottom margins.

- ~~The last two pages of the project shall consist of two 8 1/2 x 11" sheets containing drawings, plans, schematics, or pictures of the project which will give the judges a clear understanding of the merits of the project.~~

Submission Process

~~Submissions must be sent by the Chapter President to the Refrigeration Committee Staff Liaison (amorts@ashrae.net) by May 1st to be considered for that year's competition. Chapters should also submit a copy of their submission to Chapter Technology Transfer Committee (CTTC) Regional Vice Chair (RVC) for informational purposes as well.~~

Refrigeration Awards Subcommittee Membership and Responsibilities

~~The Chair of the Refrigeration Committee shall select three members who have at least two years of service on the Committee to serve on the Milt Garland and Comfort Cooling Awards Subcommittee.~~

- ~~The Awards Committee shall develop a brief article calling for award nominations to be published in the Jan/Feb Insights.~~
- ~~The Awards Subcommittee shall judge the Refrigeration Comfort Cooling Award submissions using the scoring chart in Table 2.~~
- ~~Scores shall be delivered to the Refrigeration Committee Staff Liaison no later than 14 days prior to the Refrigeration Committee's meeting at the Society annual conference.~~
- ~~Shortly after the winner is notified, the Awards Subcommittee shall convey the documentation accompanying the nominated and the winning projects to the ASHRAE *Journal* editor for potential publication.~~

Staff Liaison Responsibilities

~~The Refrigeration Committee Staff Liaison shall provide support through the following activities:~~

- ~~Receive submissions and distribute to the Awards Subcommittee.~~
- ~~Collect and summarize ratings for review and voting by the full committee at the Society annual meeting.~~
- ~~Procure all award and recognition materials as shown above for the Refrigeration Comfort Cooling Award and mail such materials to all recipients not present at the Society meeting.~~

COMFORT COOLING AWARD SUBMISSION FORM1. **Name of building or project:** _____**Location:** _____ **Initial Date of Operation:** _____**Chapter Submitting:** _____**Has chapter approved nomination?** _____2. **Award Winner** (note person listed here will be official winner of award, receive plaque at Plenary session, get travel reimbursement, etc.)a. **Name:** __________ **Role in project:** __________ **ASHRAE Membership Number (if applicable):** _____b. **Address (including country):** _____

c. **Office Telephone:** _____d. **E-mail address:** _____e. **Company:** _____3. **Co-Winner** (if appropriate only. Note there will be only the one official winner but more can be recognized if warranted)a. **Name:** __________ **Role in project:** __________ **ASHRAE Membership Number (if applicable):** _____b. **Address (including country):** _____

c. **Office Telephone:** _____d. **E-mail address:** _____e. **Company:** _____

(please append additional names if appropriate)

4. **ASHRAE Linkage** (the prime designer is an ASHRAE member, the installer is a member, the firm is Golden Circle, or the owner, supplier, etc., is a member, etc. Note the person listed here does not receive award unless listed above).a. **Name:** __________ **ASHRAE Member Linkage:** __________ **ASHRAE Membership Number:** _____b. **Address (including country):** _____

c. **Office Telephone:** _____d. **E-mail address:** _____e. **Company:** _____5. **Owner's release:**

I certify that I am the owner or the authorized representative of this project, and hereby grant permission to ASHRAE to use all the enclosed data and information in the judging and subsequent publicity of this project.

Typed Name:

a. **Name:** __________ **b. Title:** _____c. **Signature:** _____ **Date:** _____

_____ (Signatures must be on form submitted to ASHRAE)

_____ **d. Company:** __________ **e. Address (including country):** _____

_____ **f. Office Telephone:** __________ **g. E-mail address:** _____

**TABLE 2: SCORING CHART
FOR
REFRIGERATION COMFORT COOLING AWARD**

		Evaluation Points			
Problem	A1. Complexity of Problem	-	-	A. Problem	
	-	-	-	Ext. Difficult	100%
	Subtotal: PROBLEM – Maximum 20 Points	Sum =	-	Very Difficult	75%
	-	-	-	Difficult	50%
				Not Difficult	30%
Concept	B1. Concept – Maximum 10	-	-	B. Concept	
	-	-	-	Superior	100%
	B2. Integrated Design – Maximum 5	-	-	Excellent	67%
	-	-	-	Very Good	53%
	B3. Sustainability – Maximum 5	-	-	Good	47%
	-	-	-	Fair	33%
B.4 Originality – Maximum 10					
Subtotal: CONCEPT – Maximum 30 Points	Sum =	-			
Solution	C1. Performance Criteria Achieved – Maximum 30	-	-	C. Solution	
	-	-	-	Superior	100%
	C2. Energy Effectiveness – Maximum 5	-	-	Excellent	67%
	-	-	-	Very Good	53%
	C3. Budget Restrictions – Maximum 5	-	-	Good	43%
	-	-	-	Fair	33%
	C4. Ease of Maintenance – Maximum 10	-	-		
	-	-	-		
Subtotal: SOLUTION – Maximum 50 Points	Sum =	-			
DISCRETIONARY BONUS* – Maximum 10	-	-			
GRAND TOTAL	-	-			

*Reasoning for Bonus:

Under MOP B4.8, award procedures for Milt Garland & Comfort cooling Awards

- The winning projects selected by the Refrigeration Committee ~~from the Chapter nominees~~ shall receive the following:
 - The designer of the winning project shall receive a plaque at a Society Winter Meeting.
 - The project's owner shall receive a plaque to be presented at a refrigeration program meeting of the chapter, if requested.
- Additionally, in the case of submissions by chapters, chapters will receive the following recognitions:
 - The chapter nominating the winning project shall receive a felt patch to go on the chapter award banner. Patch will be presented at the CRC following the Society award presentation.
 - All chapters submitting a nomination shall be awarded ribbons at the following year's CRC.
- Submission Criteria for:
 - Comfort Cooling Award
 - Milton W. Garland Commemorative Refrigeration Award

The awards are open to all who think their projects or other projects with which they are familiar, have achieved some distinction.

- Projects nominations may be prepared by the designers, architects, engineers, owners, or suppliers.
- A member of the project team or the owner must be an ASHRAE member. The nominator must inform and have approval from the owner of the installation that the entry may be published. (The owner's name may be withheld for privacy.) A release to this effect must be obtained from the owner of the project (see Submission Form).
- All projects must be submitted within following twelve (12) months and before forty-eight (48) the thirty-six (36) preceding months of the initial operation date of the system.
- ~~Each Chapter may only have one submittal and may devise their own method(s) for selecting their submission.~~

Submission Process

- Submissions must be sent ~~by the Chapter President~~ to the Refrigeration Committee Staff Liaison (amorts@ashrae.net) by May 1st to be considered for that year's competition. Staff Liaison will ~~Chapters should also~~ submit a copy of their submission to Chapter Technology Transfer Committee (CTTC) Regional Vice-Chair (RVC) for informational purposes as well.

SECTION F: COMFORT COOLING AWARD FOR PROJECT EXCELLENCE

Description

The award shall be known as the Comfort Cooling Award for Project Excellence and will

encourage those studying it to expand their interest in and appreciation for comfort cooling applications. The award applies to any commercial or industrial project utilizing refrigeration equipment ~~Refrigeration shall be defined as any mechanically produced cooling utilized~~ in a comfort cooling application. The award shall be made to both the designer and the owner of *a comfort cooling application which highlights innovation and/or new technologies.*

AWARD SUBMISSION FORM

Applying for (Check One)

- Milton W. Garland Commemorative Award for Project Excellence
- Comfort Cooling Award for Project Excellence

1. **Name of building or project:** _____
Location: _____ **Initial Date of Operation:** _____
ASHRAE Member Chapter Submitting: _____
Has chapter approved nomination? _____

2. **Award Winner** (note person listed here will be official winner of award, receive plaque at Plenary session, get travel reimbursement, etc.)

- a. Name: _____
 Role in project: _____
 ASHRAE Membership Number (if applicable): _____
- b. Address (including country): _____

- c. Office Telephone: _____
- d. E-mail address: _____
- e. Company: _____

3. **Co-Winner** (if appropriate only. Note there will be only the one official winner but more can be recognized if warranted)

- a. Name: _____
 Role in project: _____
 ASHRAE Membership Number (if applicable): _____
- b. Address (including country): _____

- c. Office Telephone: _____
- d. E-mail address: _____
- e. Company: _____
 (please append additional names if appropriate)

4. **ASHRAE Linkage** (the prime designer is an ASHRAE member, the installer is a member, the firm is Golden Circle, or the owner, supplier, etc., is a member, etc. Note the person listed here does not receive award unless listed above).

- a. Name: _____
 ASHRAE Member Linkage: _____
 ASHRAE Membership Number: _____
- b. Address (including country): _____

- c. Office Telephone: _____
- d. E-mail address: _____
- e. Company: _____

5. **Owner's release:**

I certify that I am the owner or the authorized representative of this project, and hereby grant permission to ASHRAE to use all the enclosed data and information in the judging and subsequent publicity of this project.

Typed Name:

- a. Name: _____
- b. Title: _____
- c. Signature: _____ Date: _____
 (Signatures must be on form submitted to ASHRAE)
- d. Company: _____
- e. Address (including country): _____
- f. Office Telephone: _____
- g. E-mail address: _____

TABLE OF CONTENTS

SECTION E – COMMITTEES

Part 1 Selection and Operations

SECTION E – SUBCOMMITTEES

E1.1 Standing Subcommittees of the Refrigeration Committee are organized by the Chair as necessary to satisfy the needs of the committee.

E1.2 Ad hoc subcommittees may be appointed by the Chair of the committee with the approval of Refrigeration Committee.

E1.3 The Chair shall form additional subcommittees as needed to conduct the business of the Refrigeration Committee in a practical and efficient manner. As conditions change, the Chair may dissolve these subcommittees. Both their appointment and dissolution requires approval of Refrigeration Committee.

E1.4 The Chair shall appoint the members and chair of each subcommittee, with the consent of Refrigeration Committee. The chair of each subcommittee must be a member of Refrigeration Committee. At least three subcommittee members should be members of the Refrigeration Committee, but the Chair may appoint additional subcommittee members who are not members of the Refrigeration Committee when there is a need for members who have expertise and experience in certain areas that are of immediate importance and not available from the Refrigeration Committee members.

E1.5 Subcommittee members are appointed for the Society year. If a member's term of service on the committee continues into the next Society year, they may be re-appointed to the same or different subcommittee by the incoming Chair.

E1.6 The subcommittees shall meet at least two (2) times per year at the Annual and Semi-Annual Society meetings.

E1.7 The subcommittee Chair shall report subcommittee activities at the appropriate point in the agenda of the Refrigeration Committee meeting and provide a written report to be included in the report for Tech Council.

REF Regulatory Update

Matt Ritter
June 2015





Acknowledgements

Disclaimer

The information contained herein are believed to be accurate as of the date hereof. Since the information referred to herein are beyond our control, Arkema expressly disclaims any and all liability as to any results obtained or arising from any reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN.

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International Regimes

- Montreal Protocol

- Several new HFC Amendment proposals introduced in 2015
- Extra sessions and HFC Workshop in 2015
- Industry generally supports this path forward
- Large effort to get approval this year

- United Nations Framework Convention on Climate Change (UNFCCC)

- Small amount of progress in 2014
- Written agreement by end of 2015 and implemented in 2020
- Parties attempting to describe elements for mitigation, adaptation, iNDCs (12 submitted), finance, technology and capacity building, transparency of action and support, and ambition and equity
- Extra UNFCCC sessions planned in 2015



United Nations
Framework Convention on
Climate Change



Regional Regulatory Programs Driving Use of New Materials

- **European Union**

- Entered into force January 2015 and Member state regulations to enact the EU regulation currently under consultation
- Complex reporting and verification processes

- **United States**

- Change of status (delisting) final rule expected in July 2015
- Another listing rule expected 2nd half of this year
- Proposal to include HFCs under refrigerant management provisions this year

- **Japan**

- April 2015 start with cap and reduction scheme and bans/GWP limits
- Manufacturers and importers shall ensure that the weighted average of GWP of domestic shipments does not exceed the target index

- **Canada**

- Published consultation document outlining targeted sectors
- Planned for 2017 implementation

- **Australia**

- Under development

New SNAP Rules at U.S. EPA



Final listing rule for new materials/applications

- New listings for R-290, 170, 441a, 600a and 32 in 2015
 - Vending, self-contained home AC units, retail refrigeration
 - Restrictions on charge sizes
- Expecting more new listings during 2nd half of 2015

Proposed Status change (delisting) rule for HFCs

- Foams, MAC, Commercial Refrigeration, and Aerosols
 - Transition times vary and 134a targeted in certain markets
- Public Hearing
- Timeline
 - Final rule expected Summer 2015
- Additional stakeholder meetings



California

- **Reductions to meet Governor's commitment of 40% reduction below 1990 levels by 2030**
- **Working on additional command and control proposals but listening to suggestions**
- **Supportive of MP and U.S. EPA efforts but will go further than present programs**
- **SLCP Concept Paper and Public Workshop**
 - Proposal in Fall and final strategy in Spring 2016
- **Focus on foams, aerosols, and transportation**
- **Refrigerant management**
 - Leakage, reporting, certifications





Policy/Regulatory Challenges

- Patch Work Regulatory Approach

- In progress
- Difficult from a global perspective
- Communication of alternatives

- Energy Efficiency Linkage

- Agency collaboration
- Industry/Agency

- Codes and Standards

- Pool of options is larger and introduces new risk
- Several new initiatives
 - AHRI, Alliance, greater interest from regulators

- Refrigerant Management

- Included with many new programs

Refrigeration Committee
Chris Seeton, Chair
Date: June 2015

Item #	MBO	Status	Date Due	Assigned To	Applicable Strategy #	MBO Comments
1	Support and Promote ASHRAE Strategic Plan	OPEN	ONGOING	Seeton, Ritter		Leadership to review draft ASHRAE Strategic Plan. Goal to make REF cognizant committee for ASHRAE's refrigeration activities.
2	Promote chapter-level activities and educational outreach	OPEN	30-Jun-15	Surange, Cambria, Lim	1.1, 1.4, 1.7	<ul style="list-style-type: none"> i) Circulate List of Refrigeration Topics for lectures / programs to the Chapters. ii) Ask Regions to make panel of speakers from their region on REF topics. iii) Pursue the proposal regarding Regional DL's in Refrigeration in 2 to 3 geographically areas e.g. America, Asia & other regions. iv) Identify labs where a demonstration can be made on types of refrigeration systems such as DX, Gravity Flow, Pump Feed with Automatic Controls. v) Suggest suitable topics like solar operated farm level cold stores, sustainable designs for medium & large cold stores, net zero energy Cold Chain projects. vi) Publish information on Milton Garland comfort cooling & Briley Awards in ASHRAE Insights and Members 1st Newsletter.
2.a	Student chapter activities, programs and involvement	OPEN	30-Jun-15	Surange, Berge	1.7	YEA/REF mixer for scheduled for Atlanta.
2.b	ASHRAE Exchange	OPEN	30-Dec-14	Surange, Ritter	3.1	Surange has posted a REF Topic titled "Green Cold Chain" on ASHRAExCHANGE.
2.c	Increase participation with CTTC	OPEN	ONGOING	Lim, Surange	2.4, 3.5	Lim is liaison to CTTC attending CTTC meetings and presented report to CTTC for REF discussion
2.d	Increase ALI exposure	OPEN	ONGOING	Becker	2.2, 2.4, 2.5,	Organize ALI Subcommittee. Assist in the development of programs for regional chapters on refrigeration concepts. Liaise with YEA. Royal developing course proposal with ALI.
3	Support "Guide to Sustainable Refrigerated Facilities and Refrigeration Systems" – RP 1634	OPEN	ONGOING	Cambria, Ritter, Anderson, Amrane, Surange, Becker	1.2, 1.4, 1.7, 1.8, 2.8, 2.9	Project started. Outline and 90% draft of 4 chapters complete. PMS met with contractor in Chicago. Meet again in ATL
3.a	Address energy "baseline" calculation methodology application for refrigeration systems	OPEN	ONGOING	Royal, Surange, Becker, Korenko, Shockley, Cole	1.3, 1.4	To move forward in LCCP analysis of refrigeration systems, a base needs to be established
4	Support development of commissioning process/methods for LGWP refrigeration systems	OPEN	30-Jun-16	Cambria, Shockley, Becker, Korenko	1.2, 1.5, 2.8, 2.9, 3.3	Current Refrigerant Commissioning Guide published for Energy Design. Begin development of package for next generation focusing on refrigerant safety.
5	Collaborate with refrigeration related technical organizations	OPEN	30-Jun-15	Amrane, Ritter, Korenko	1.1, 2.5, 4.2	IAR, , USGBC, IIR representatives attended Chicago meeting. GCCA submitted liaison report for CHI and ATL. Incoming members include members from IIR, UNEP and IAR.
5.a	Trade Associates, like AHRI, etc	OPEN	30-Jun-15	Ritter, Berge	1.1, 2.5, 4.2	AHRI member on REF. GCCA liaison submitted report. Continue to work with RETA, RSES, IARW,
6	Support liaison interaction within Society	OPEN	30-Jun-15	Ritter, Amrane	1.7	REF made liaison assignments with TCs with refrigeration interest. Liaisons will report after each meeting with issues TC is interested in and issues they can use help on.
6.a	TCs, etc	OPEN	30-Jun-15	Kazachki, Shockley	1.7	Conduct outreach to TCs in sections 3, 8, and 10 that have refrigeration focus. REF leadership met with Section 10 TCs in Chicago
6.a	Refrigeration Handbook	OPEN	30-Jun-15	TBD	3.3	Organize Handbook Subcommittee. Assist Refrigeration Handbook chapter TC chairs in assessing information from ASHRAE College of Fellows and outside organizations. Shockley leading effort and notes Don Fenton's contacts are making progress in reviewing chapters.

FINAL DRAFT

Refrigeration Committee

Matt Ritter, Chair

Date: 06/28/2015

Item #	MBO	Status	Date Due	Assigned To	Applicable Strategy #	MBO Comments
Included in Definition of Roles						
1	Develop and Expand Refrigeration Education & Outreach	OPEN	30-Mar-16	Lim, Royal, Shockley, Rule	1c, 3d	<ul style="list-style-type: none"> i) Broadcast information on Milton Garland comfort cooling & Briley Awards in ASHRAE Insights and Members 1st Newsletter. ii) Organize ALI Subcommittee. Assist in the development of programs for regional chapters on refrigeration concepts. Liaise with YEA. Royal developing course proposal with ALI. iii) Continue to support Handbook Subcommittee to assist with Refrigeration Handbook chapters. Shockley working with Don Fenton.
2	Support of ASHRAE Developing Economy Objectives	OPEN	30-Dec-16	Diercyckx, Korenko, Coulomb	4a, 4b, 3b	<ul style="list-style-type: none"> i) Training on environmental and safety concerns of alternative refrigerants for developing countries ii) ii) Develop guidance on available alternatives or resources which promote energy efficient alternatives iii) Support dissemination of GRMI principles to developing countries
3	Implementation of UNEP Partnership Goals	OPEN	Ongoing, but begin to implement by 01/01/2016	Nair-Bedouelle, Aguilo, Becker	4a, 4b	<ul style="list-style-type: none"> i) ASHRAE & UNEP will explore opportunities to promote responsible and sound management of refrigerants ii) ii) ASHRAE and UNEP to cooperate and coordinate efforts related to energy efficiency in the buildings sector iii) iii) ASHRAE through its Distinguished Lecturer (DL) program will work with UNEP to provide speakers to collaborative activities between UNEP and ASHRAE chapters/sections
4	Serve as the Technical Experts for Refrigeration related issues for ASHRAE	OPEN	1/30/2016 with ongoing technical support	Seeton, Amrane, Robbins	3a, 3c	<ul style="list-style-type: none"> i) Address energy "baseline" calculation methodology application for refrigeration systems through LCCP analysis ii) Identify labs where a demonstration can be made on types of refrigeration systems such as DX, Gravity Flow, Pump Feed with Automatic Controls.
5	Efficient communication and operation of the REF Committee	OPEN	Ongoing	Ritter, Amrane, past Chairs	2a, 2b, 2c	<ul style="list-style-type: none"> i) Assure Technical Committee alignment ii) Development of a Planning Subcommittee for REF (current and future leadership) iii) Continued collaboration with other REF related organizations