



Shaping Tomorrow's
Built Environment Today

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TO: Traci Hanegan, Chair TC 9.10, hanegan@coffman.com
Robert Weidner, Research Subcommittee Chair TC 9.10, rhweidner@gfnet.com
Roland Charneux, Kathleen Owen, Gemma Kerr, John Fisher, Tom Rice,
Work Statement Author(s), rcharneux@pageaumorel.com; gkashrae@magma.ca;
mko@rti.org;

FROM: Michael Vaughn, Manager of Research and Technical Services (MORTS)

CC: Jeff Gatlin, Research Liaison 9.0, jeff.gatlin@pe@gmail.com

DATE: July 19, 2017

SUBJECT: Work Statement (1780-WS), "Test method to evaluate cross-contamination of gaseous contaminant within total energy recovery wheels"

During their recent Annual meeting, the Research Administration Committee (RAC) reviewed the subject Work Statement (WS) and voted to return with comments.

Below are the issues, concerns, and questions that must be addressed in your next submission of the WS if you choose to resubmit.

1. Co-sponsoring TC's have concerns and voted against this work statement.
2. Explain and resolve issues with co-sponsors.
3. Need more details on bidders list and additional bidders. At least four recommended bidders required. One of the listed bidders is a work statement author.
4. Authors need to follow the procedures outlined in the Research Manual regarding tasks.

Please coordinate changes to this Work Statement with your Research Liaison, Jeff Gatlin, RL9@ashrae.net or jeff.gatlin@pe@gmail.com prior to resubmitting it to the Manager of Research and Technical Services for further consideration by RAC.

Also, it is necessary that you provide a new TC vote on the revised Work Statement, and a letter describing how each of the above items were addressed in the revision.

If you wish for this work statement to be reconsidered at the next RAC meeting, the revised Work Statement must be sent (electronically) to Michael Vaughn, Manager of Research and Technical Services (morts@ashrae.net) by August 15, 2017. The next opportunity for consideration after this deadline is December 15, 2017 or consideration at RAC's 2018 winter meeting.

Project ID	1780	
Project Title	Test method to evaluate cross-contamination of gaseous contaminant within total energy recovery wheels	
Sponsoring TC	TC 9.10, (Laboratory Ventilation)	
Cost / Duration	\$125,000 / 5 Months	
Submission History	1st WS Submission, RTAR accepted Nov. 2015	
Classification: Research or Technology Transfer	Basic/Applied Research	
RAC 2017 Annual Meeting Review	RTAR STAGE FOLLOWED	
Check List Criteria	Voted NO	Comments & Suggestions
State-of-the-Art (Background): The WS should include some level of literature review that documents the importance/magnitude of a problem. If not, then the WS should be returned for revision. RTAR Review Criterion		#12- well done
Advancement to the State-of-the-Art Is there enough justification for the need of the proposed research. Will this research significantly contribute to the advancement of the State-of-the-Art. RTAR Review Criterion		#12- marginal but acceptable
Relevance and Benefits to ASHRAE: Evaluate whether relevance and benefits are clearly explained in terms of: a. Leading to innovations in the field of HVAC & Refrigeration b. Valuable addition to the missing information which will lead to new design guidelines and valuable modifications to handbooks and standards.		#12 - criterion B
IF THE THREE CRITERIA ABOVE ARE NOT ALL SATISFIED - MARK "REJECT" BELOW BUT ADDRESS THE FOLLOWING CRITERIA AS APPROPRIATE		
Detailed Bidders List Provided? The contact information in the bidder list should be complete so that each potential bidder can be contacted without difficulty.		#12 - enough bidders identified, but only name and affiliation: no contact info for Mike to use. #11 - 3 potential bidders identified. No emails provided. #7- Very well-written. Clear description of previous work, the need for the present work, and what must be done to accomplish the objectives. #9 -Need more info on bidders list
Proposed Project Description Correct? Are there technical errors and/or technical omissions that the WS has that prevents it from correctly describing the project? If there are, then the WS needs major revision.		#11 - Since one of the justifications of this study is energy savings associated with ERVs and the effect of cross contamination, not only on intake air quality but also on energy efficiency, it would be useful to state the typical magnitude of the impact of cross contamination on energy efficiency. IF adsorption/discruption of the contaminants in the desiccant is a contributor to cross contamination, would sulfur hexafluoride be a representative challenge gas for all of the potential contaminants? #7 - Good description of need, previous work, required work.
Task Breakdown Reasonable? Is the project divided into tasks that make technical and practical sense? Are the results of each task such that the results of the former naturally flow into the latter? If not, then major revisions are needed to the WS that would include: adding tasks, removing tasks, and re-structuring tasks among others.		#12 - Well done. #11 - Detailed breakdown provided. However, the digression about the background may be better included in the SoA section. #9 -Tasks need to be identified. Authors need to review Research Manual
Adequate Intermediate Deliverables? The project should include the review of intermediate results by the PMS at logical milestone points during the project. Before project work continues, the PMS must approve the intermediate results.		#9- Intermediate Deliverables need to be identified
Proposed Project Doable? Can the project as described in the WS be accomplished? If difficulties exist in the project's WS that prevent a successful conclusion of the project, then the project is not doable. In this situation, major revision of the WS is needed to resolve the issues that cause the difficulty.		#12 - MAYBE. According to Wikipedia, SF6, required in the referenced ASHRAE 110 test procedure, is now banned for tracer gas purposes in the European F-gas regulations. This MOT should be strongly encouraged to adopt an alternative with much lower GWP (23,900 for SF6, but relatively small amounts released).
Time and Cost Estimate Reasonable? The time duration and total cost of the project should be reasonable so that the project can be as it is described in the WS.		#11- the authors need to list total project duration rather than x months of this and y months of that. The milestone schedule is not clear. It looks like these are task durations rather than timing from project start.
Proposed Project Biddable? Examining the WS as a whole, is the project described in the WS of sufficient clarity and detail such a potential bidder can actually understand and develop a proposal for the project? This criterion combines the previous three criteria into an overall question concerning the usefulness of the WS. If the WS is considered to not be biddable, then either major revisions are in order or the WS should be rejected.		#12 - Weird evaluation criterion 3, "Value to ASHRAE" (25%). Evaluation criterion 4 would be better expressed as "quality of facilities and access" Calber of bidder's team not included at all. #11 - Need to make the suggested changes before it can be bid. Need also to clarify co-sponsorship based on this revised WS. The authors state remedies but it is not clear if these remedies are acceptable to the potential co-sponsors (especially TC5.5).
Decision Options	Initial Decision	Final Approval Conditions
ACCEPT		#11 - I am between Cond. Accept and Return. Note: There are numerous negative votes from other TCs with whom this WS was coordinated. However, the WS has strong support from TC 9.06, TC 9.10, and SSPC-62.1. TC5.5 did not approve this WS but is listed as supporters of this WS??? K. Owen of RTI International is a coauthor of the WS and a potential bidder. TC 9.10 received cosponsoring votes from several other TCs. There are many negative votes and concerns with this research from the other TCs include a vote of 0 votes for and 5 against from TC 5.5 (Air to Air Energy Recovery). There are 4 pages of comments from these other TCs. This WS should be returned or rejected and TC 9.10 needs to resolve these differences before RAC can consider this WS. It does not seem as though TC 9.10 is in a good position to lead this research. #7 - TC has addressed RAC comments on first version. However there was a negative vote (in addition to 4 who did not return the ballot), and that does not seem adequately explained. It says "Ken Mead voted Yes". Who voted no? #9 -This is a good project. Authors need to follow the procedures discussed in the Research Manual regarding tasks. Also need more details on bidders list.
COND. ACCEPT		
RETURN		
REJECT		

ACCEPT Vote - Work statement(WS) ready to bid as-is

CONDITIONAL ACCEPT Vote - Minor Revision Required - RL can approve WS for bid without going back to RAC once TC satisfies RAC's approval condition(s) to his/her satisfaction

RETURN Vote - WS requires major revision before it can bid

REJECT Vote - Topic is no longer considered acceptable for the ASHRAE Research Program due to duplication of work by another project or because the work statement has a fatal flaw(s) that makes it unbiddable

WORK STATEMENT COVER SHEET

(Please Check to Insure the Following Information is in the Work Statement)

- A. Title
- B. Executive Summary
- C. Applicability to ASHRAE Research Strategic Plan
- D. Application of the Results
- E. State-of-the-Art (background)
- F. Advancement to State-of-the-Art
- G. Justification and Value to ASHRAE
- H. Objective
- I. Scope
- J. Deliverables/Where Results will be Published
- K. Level of Effort
- Project Duration in Months
- Professional-Months: Principal Investigator
- Professional-Months: Total
- Estimated \$ Value
- L. Proposal Evaluation Criteria & Weighting Factors
- M. References
- N. Other Information to Bidders (Optional)

Date:

Title:

WS#
(To be assigned by MORTS - Same as RTAR #)

Results of this Project will affect the following Handbook Chapters, Special Publications, etc.:

Responsible TC/TG:

Date of Vote:

For		
Against	*	
Abstaining	*	
Absent or not returning Ballot	*	
Total Voting Members		

This W/S has been coordinated with TC/TG/SSPC (give vote and date):

Has RTAR been submitted?
Strategic Plan
Theme/Goals

Work Statement Authors: **

Proposal Evaluation Subcommittee:
Chair:
Members:

Project Monitoring Subcommittee:
(If different from Proposal Evaluation Subcommittee)

Recommended Bidders (name, address, e-mail, tel. number): **

Potential Co-funders (organization, contact person information):

(Three qualified bidders must be recommended, not including WS authors.)

- Is an extended bidding period needed?
- Has an electronic copy been furnished to the MORTS?
- Will this project result in a special publication?
- Has the Research Liaison reviewed work statement?

Yes	No	How Long (weeks)
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	
<input type="text"/>	<input type="text"/>	

* Reasons for negative vote(s) and abstentions

** Denotes WS author is affiliated with this recommended bidder
Use additional sheet if needed.

WORK STATEMENT#

Title:

Sponsoring TC/TG/MTG/SSPC:

Co-Sponsoring TC/TG/MTG/SSPCs (List only TC/TG/MTG/SSPCs that have voted formal support)

Executive Summary:

Applicability to the ASHRAE Research Strategic Plan:

[Empty box for applicability to the ASHRAE Research Strategic Plan]

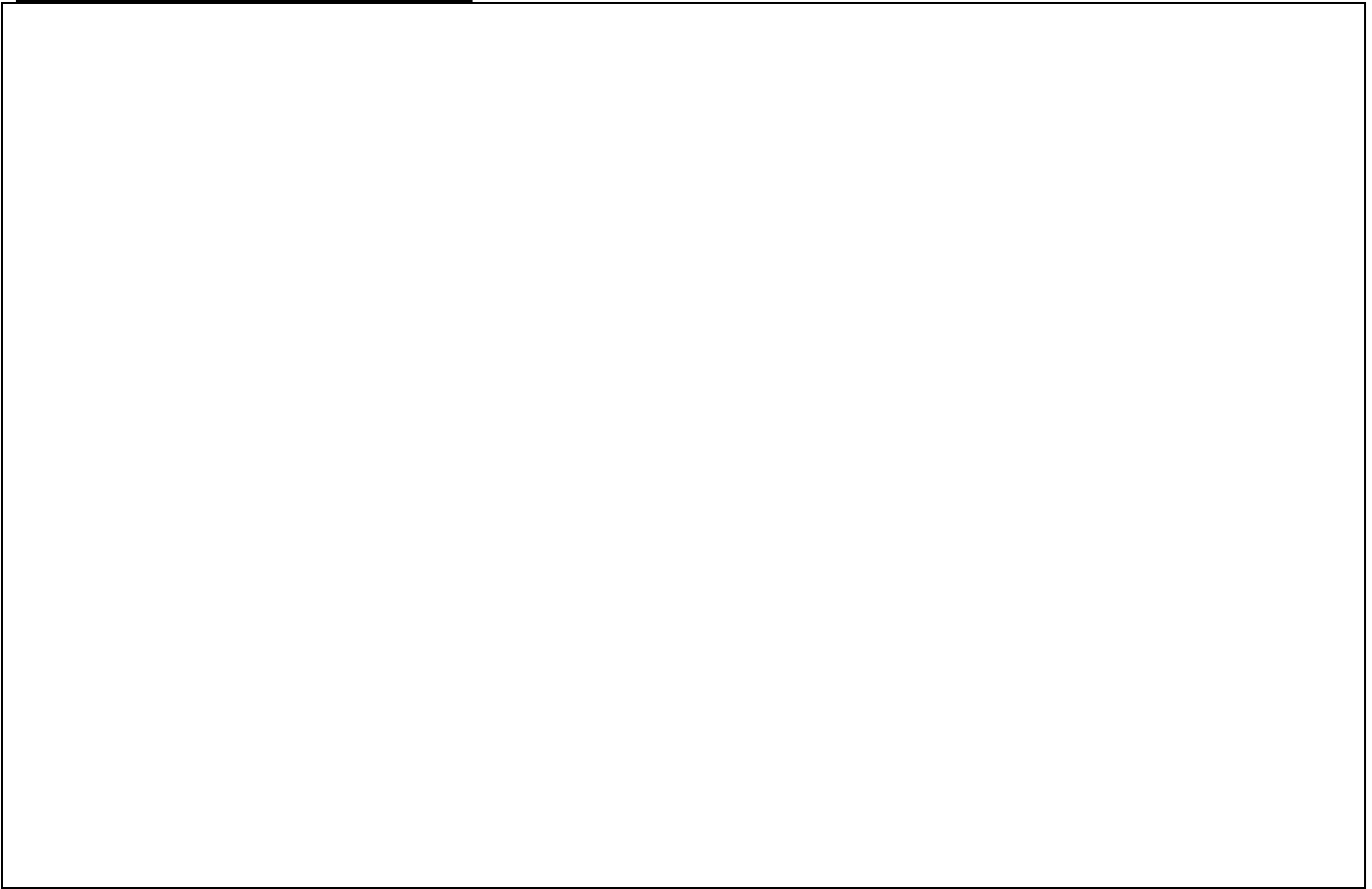
Application of Results:

[Empty box for application of results]

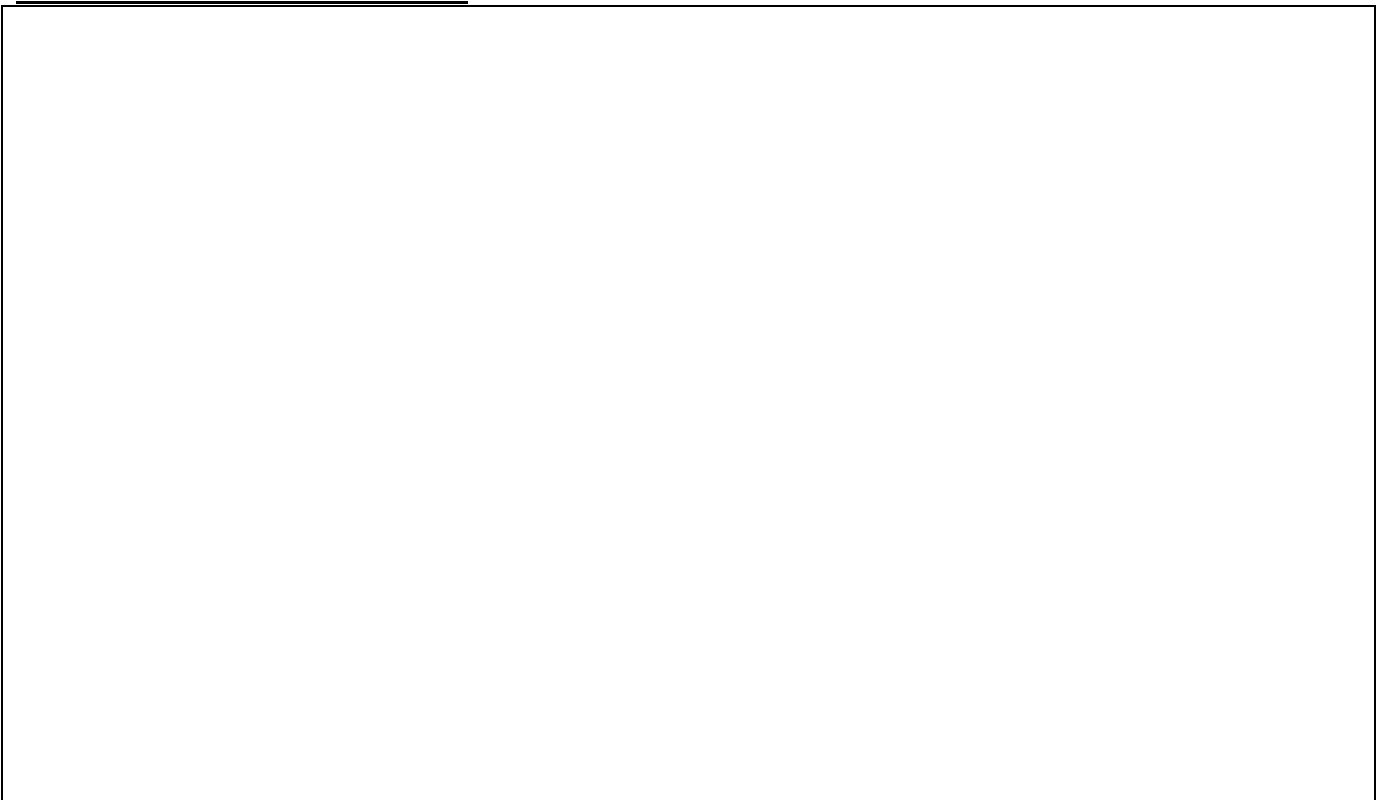
State-of-the-Art (Background):

[Empty box for state-of-the-art (background)]

Advancement to the State-of-the-Art:

A large, empty rectangular box with a thin black border, intended for the user to provide details on the advancement to the state-of-the-art.

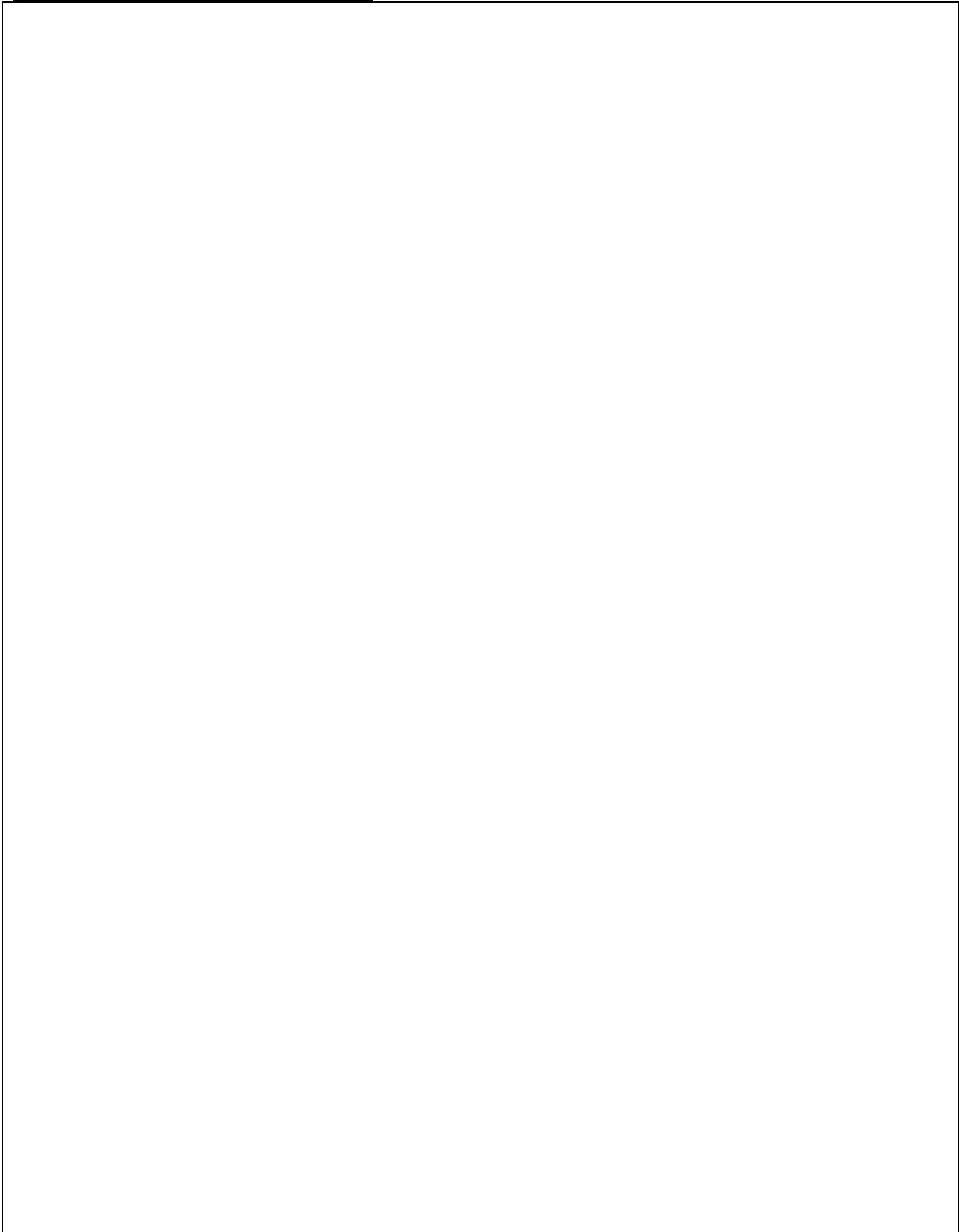
Justification and Value to ASHRAE:

A large, empty rectangular box with a thin black border, intended for the user to provide justification and value to ASHRAE.

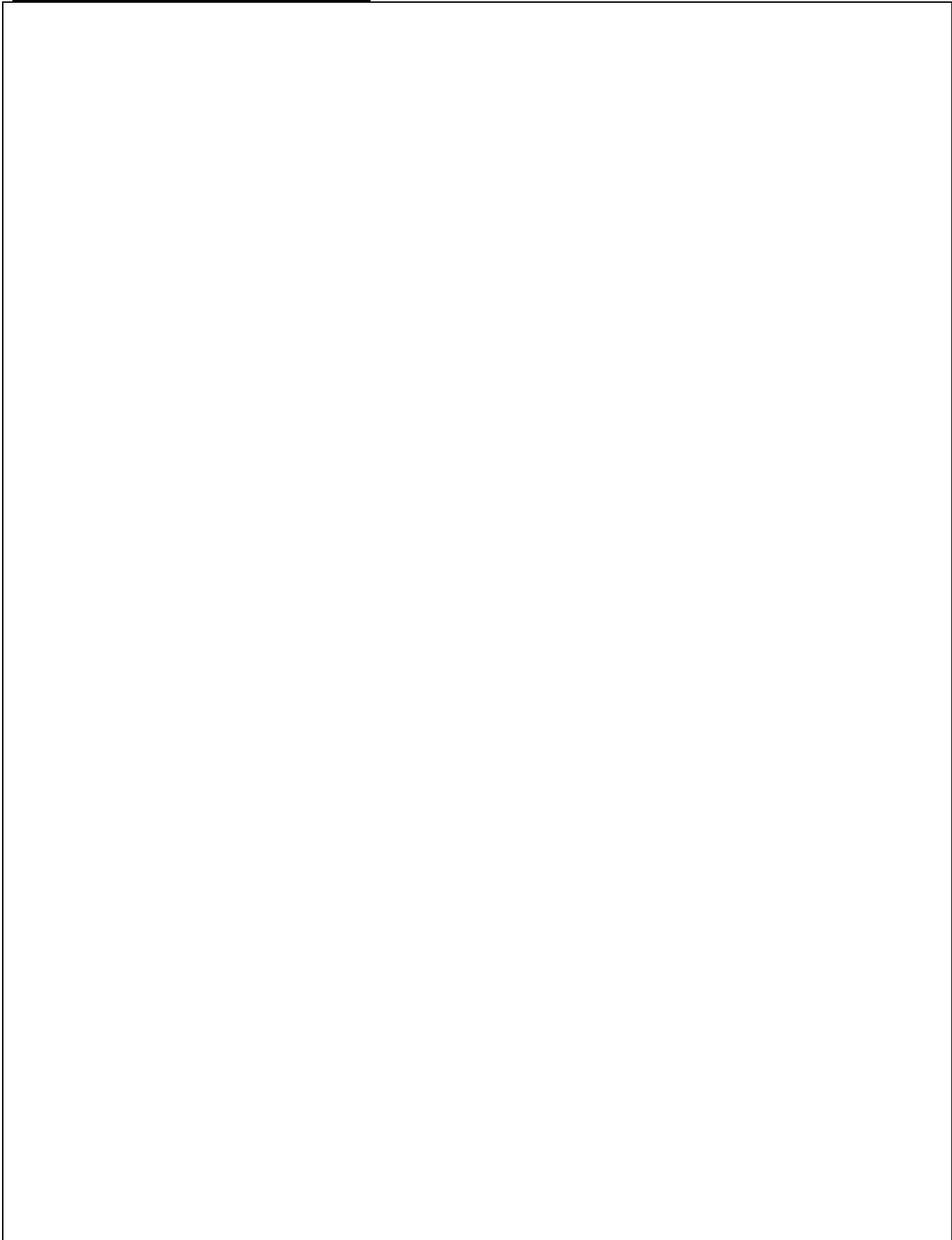
Objectives:

Scope/Technical Approach:

Scope/Technical Approach (Continued 2):



Scope/Technical Approach (Continued 3):



Deliverables/Where Results Will Be Published:

--

Deliverables/Where Results Will Be Published (Continued):

--

Level of Effort:

--

Proposal Evaluation Criteria:

No.	Proposal Review Criterion	Weighting Factor

Project Milestones:

No.	Major Project Completion Milestone	Deadline Month

Authors:

--

References:

[Empty reference box]

Other Information for Bidders (Optional):

Feedback to RAC and Suggested Improvements to Work Statement Process

Now that you have completed the work statement process, RAC is interested in getting your feedback and suggestions here on how we can improve the process.



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Manager Research & Technical Services

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TO: Roland Charneux, Chair TC 9.10, rcharneux@pageaumorel.com
Robert Weidner, Research Subcommittee Chair TC 9.10, rhweidner@gfnet.com

CC: Jeff Gatlin, Research Liaison 9.0, jeff@thompsonengineers.com

FROM: Michael Vaughn, MORTS, mvaughn@ashrae.org

DATE: November 20, 2015

SUBJECT: Research Topic Acceptance Request (1780-RTAR), "Test Method to Evaluate Cross-Contamination of Gaseous Contaminant within Total Energy Recovery Devices"

During their annual meeting, the Research Administration Committee (RAC) reviewed the subject Research Topic Acceptance Request (RTAR) and voted to accept it with comments for further development into a work statement (WS) provided that the key comment(s) and question(s) below are addressed to the satisfaction of your Research Liaison, Jeff Gatlin, jeff.gatlin.pe@gmail.com, or RL9@ashrae.net, in the work statement draft.

1. Has SSPC 62.1 been invited to co-sponsor this research? TC 9.6 (Healthcare Facilities) and TC 5.5 (Air-to-Air Energy Recovery) – Cognizant TC for Standard 84 – should also be invited to co-sponsor this research.
2. There has already been a lot of research on this topic, especially in Europe, but none of this research is mentioned in the RTAR. A literature review should be performed prior to submission of the WS to RAC to help identify better what is truly needed from this project.
3. WS should also be clearer about how this work will potentially impact ASHRAE Standard 62.1 and how the research will advance what is already known on this topic. More detail is also needed in the WS on the types of gaseous contaminants that will be evaluated in this research.
4. To my knowledge, there is no standard for testing cross-contamination and this might be a more important objective for this project. The task of improving Standard 84 also needs to be better defined. What exactly is going to be improved? Having the cognizant TC for Standard 84, TC 5.5, on-board with this research should help greatly with this effort.

The work statement draft must be approved by the Research Liaison prior to submitting it to RAC.

An RTAR evaluation sheet is attached as additional information and it provides a breakdown of comments and questions from individual RAC members based on specific review criteria. This should give you an idea of how your RTAR is being interpreted and understood by others. Some of these comments may indicate areas of the RTAR and subsequent WS where readers require additional information or rewording for clarification.

The first draft of the work statement should be submitted to RAC no later than **August 15, 2017** or it will be dropped from display on the Society's Research Implementation Plan. The next likely submission deadline for a new work statement on this topic is **May 15, 2016** for consideration at RAC's 2016 Annual meeting. The submission deadline after that for work statements is **August 15, 2016** for consideration at the RAC's 2016 fall meeting.

Project ID	1780	
Project Title	Test Method to Evaluate Cross-Contamination of Gaseous Contaminant within Total Energy Recovery Devices	
Sponsoring TC	TC 9.10 (Laboratory Systems)	
Cost / Duration	\$140,000 / 24M	
Submission History	1st Submission	
Classification: Research or Technology Transfer	Technology Transfer	
RAC 2015 Fall Meeting Review		
Essential Criteria	Voted NO	Comments & Suggestions
Background: The RTAR should describe current state of the art with some level of literature review that documents the importance/magnitude of a problem. References should be provided. If not, then note it in your comments.		7 - Well written RTAR. 6 - There has been a lot of research on this topic especially in Europe. There were international projects on this topic but none is mentioned.
Research Need: Based on the background provided is the need for additional research clearly identified? If not, then the RTAR should be rejected.		2 - There is a need to clearly describe how this research will advance what is already known on the this topic. 10 - Perhaps its my own ignorance, but several things concern me. For one, glycol loops and desiccant wheels would not seem to be the only options; others with high separation and probably good performance might include run-around refrigerant loops, and heat pumping across the two air streams. Of course, given the huge range of gases, nothing will be a panacea, but I don't see attention to the issue of which gas categories are the most important. My experience is mostly with strong inorganic acids, which might have very different interactions with wheels than we'd get from the different categories of organics that are widely used.
Relevance and Benefits to ASHRAE: Evaluate whether relevance and benefits are clearly explained in terms of: a. Leading to innovations in the field of HVAC & Refrigeration b. Valuable addition to the missing information which will lead to new design guidelines and valuable modifications to handbooks and standards. Is this research topic appropriate for ASHRAE funding? If not, Reject.		2 - Highly relevant but the need for new research must be well justified. 10 - Why hasn't NIH or DOD done this and published it? Where are the hospital engineers? They have the problems of exhausting sterilizing gases (ETO, etc.), anesthetics, and chemical hoods.
IF ABOVE THREE CRITERION ARE NOT ALL SATISFIED - MARK "REJECT" BELOW & CONTINUE REVIEW BELOW		
Other Criteria	Voted NO	Comments & Suggestions
Project Objectives: Based on the background and need, evaluate whether the project objectives are: 1. Aligned with the need 2. Specific 3. Clear without ambiguity 4. Achievable If not, then appropriate feedback should be provided.	6	2 - To my knowledge there is no standard for this testing cross-contamination and this might be more important objective. The task of improving Standard 84 needs to be better defined. What exactly is going to be improved. 6 - Research is highly important and well justified. However, no specific information regarding the type of pollutants is given. Will the test cover particles, formaldehyde, VOCs, or what? Possible chemical analysis equipment was also not mentioned.
Expected Approach and Budget: Is there an adequate description of the approach in order for RAC to be able to evaluate the appropriateness of the budget? If not, then the RTAR should be returned for revision. Anticipated funding level and duration:		9 - Expected Approach 3 "Laboratory testing: Find a laboratory facility; select contaminants of concern; evaluate the impacts of airflow, temperature, condensation, relative humidity, freezing, pressure differential, molecular properties of the contaminant (i.e., polarity, water solubility, molecular size, etc.);" is quite rational. It will take much of project's estimated cost. The suggested cost of \$140,000 will be too small. 2 - The literature review should be performed prior to submission of the RTAR to identify what is truly needed.
References: Are the references provided?		
Decision Options	Initial Decision?	Final Approval Conditions
ACCEPT AS-IS		7 - Research should be collaborated with other TCs such as Healthcare and with appropriate Standards committee. It will be better to develop a multi group work statement. 13 - I feel it is a good topic but the RTAR should be clearer about how this work will potentially impact ASHRAE 62.1. The RTAR contains some statements but does not make it fully clear how restrictions in 62.1 could impact further implementation of molecular sieve desiccant heat recover devices. 2 - 62.1 and especially 62.2 should be invited too
ACCEPT W/COMMENTS		
REJECT		

ACCEPT Vote - Topic is ready for development into a work statement (WS).

ACCEPT W/COMMENTS Vote - Minor Revision Required - RL can approve RTAR for development into WS without going back to RAC once TC satisfies RAC's approval condition(s)

REJECT Vote - Topic is not acceptable for the ASHRAE Research Program

DRAFT RTAR Template

Title: _____

Summary

Describe in summary form the proposed research topic, including what is proposed, why this research is important, how it will be conducted, and why ASHRAE should fund it (50 words maximum)

Background

Provide the state of the art with key references (at the end of this document) substantiating it (300 words maximum)

Research Need

Use the state of the art described above as a basis to specify the need for the proposed effort (250 words maximum)

Project Objectives

Based on the identified research need(s), specify the objectives of the solicited effort that will address all or part of these needs (150 words maximum)

Expected Approach

Describe in a manner that may be used for assessment of project viability, cost, and duration, the approach that is expected to achieve the proposed objectives (200 words maximum).

Check all that apply: Lab testing (), Computations (), Surveys (), Field tests (), Analyses and modeling (), Validation efforts (), Other (specify) ()

Relevance and Benefits to ASHRAE

Describe why this effort is of specific interest to ASHRAE, its impact, and how it will benefit ASHRAE and the society. How does it align with ASHRAE Strategic Plans and Initiatives? How does it advance the state of the art in this area in general? Are there other stakeholders that should be approached to obtain relevant information or co-funding? (350 words maximum)

Anticipated Funding Level and Duration

Funding Amount Range: \$ _____

Duration in Months: _____

References

List the key references cited in this RTAR