

## **7. UNSOLICITED RESEARCH PROPOSALS**

An unsolicited research proposal (URP) is a research proposal initiated by a proposer seeking funding from ASHRAE. In order to be considered for funding, URPs should fall within the general research goals of the Society but not overlap significantly with ongoing or planned research activities of individual TC (or TG, MTG w/research authority, SSPC or other committees authorized to sponsor research projects). Unique and innovative projects that cut across research activities within different TCs are especially welcomed.

Unsolicited proposals should be submitted in electronic format to the Manager of Research and Technical Services (MORTS) at [MORTS@ashrae.net](mailto:MORTS@ashrae.net), who assigns the URP a number and logs it into the project control system. Included with the unsolicited research proposal (URP) submission should be copies of three ASHRAE forms, Application for Grant of Funds, Procedure Statement Regarding Unsolicited Research Proposals (URPs) and Additional Information for Potential Contractors. These forms must be completed and signed by an individual having the authority to commit the institution contractually. Electronic signature is sufficient. Since the ASHRAE review process cannot guarantee the confidentiality of any material contained in a URP and since ideas, processes and/or techniques described may already be under consideration by a TC, the author of any URP is requested to sign the Procedure Statement Regarding Unsolicited Research Proposals (URPs) form releasing ASHRAE from responsibility for proprietary or confidential material in the URP. (See Guidelines for Unsolicited Research Proposals)

### **7.1 Evaluation of Unsolicited Research Proposal (URP)**

The MORTS will work with the Chair of Research Activities Subcommittee (RAS) of Research Administration Committee (RAC) to identify an appropriate liaison from RAC, who will have responsibility for guiding the URP through the evaluation process. In most cases, the URP liaison will be the Research Liaison for the section of TCs that best aligns with the focus of the URP. However, in some cases, the MORTS and RAS Chair may choose a URP liaison from RAC who has unique expertise for evaluating the URP. The following process will be followed in evaluating URPs:

- 1) The URP liaison, and additional RAC reviewers if requested by the URP liaison, will perform an initial evaluation of the URP using the URP review form from Section 7.2 of this manual to determine whether or not it should be considered for funding by ASHRAE as a URP:
  - a. **Innovation**: Is the proposed research innovative in concept and application?
  - b. **Distinctiveness**: Does the proposed research involve unique approach, skills, equipment which otherwise are not available to any other researchers?
  - c. **New Research Topic**: Is this a new subject of research which TCs have not proposed yet?
  - d. **Timeliness**: Would a significant opportunity be lost if the project had to go through ASHRAE Research process?
  - e. **Co-Funding**: Is significant co-funding or cost sharing available for the proposed research?

AT LEAST ONE QUESTION ABOVE MUST BE ANSWERED "YES" IN ORDER TO QUALIFY THE PROPOSAL AS A URP.

IF THE PROPOSED RESEARCH DOES NOT QUALIFY FOR URP FUNDING IN OPINION OF THE RAC REVIEWER(S) - MARK "REJECT" AND NOTIFY MORTS SO PROPOSER CAN BE NOTIFIED THAT THEIR PROPOSAL HAS BEEN REJECTED FOR FUNDING BY RAC AS A URP, AND IF APPROPRIATE, THE PROPOSER WILL INSTEAD BE ENCOURAGED TO HELP DEVELOP THE PROJECT TOPIC AS A WORK STATEMENT WITH A TC FOR AN OPEN BID SOLICITATION PROCESS, ON WHICH URP PROPOSER CAN ALSO BID.

If URP passes the initial RAC evaluation, URP next goes to subject matter expert (SME) TC(s) for technical review and possible approval as described below for funding using the same URP review form from Section 7.2.

- 2) If the URP liaison determines that the URP should be considered for funding, then the liaison should identify an appropriate lead TC and ask the TC chair to form a Proposal Evaluation Subcommittee (PES) headed by the TC's Research Subcommittee Chair to evaluate the URP. If a PES is appointed, the URP liaison will next follow-up with the TC Chair and Research Subcommittee Chair to monitor the timeliness of their evaluation.
- 3) The TC's PES should use the same URP review form from Section 7.2, but must also consider whether the unsolicited work is of equal or greater importance than that already planned by the TC. The TC must consider the cost and benefit of the URP to the TC, the Society and the public to establish the advisability of recommending funding.
- 4) Should the PES recommend that the project be funded, the subsequent approval steps are identical to those of a solicited proposal. If the TC rejects the URP, it shall provide a brief explanation to the MORTS. In some cases, the PES may be empowered by the TC to work with the author of the URP proposal to make modifications to the scope and deliverables to better meet the TC needs. The proposed budget can also be adjusted to accommodate these changes. The TC must vote to authorize the PES to negotiate with the proposal author and then must approve any revised URP.
- 5) If disapproved at any level, the MORTS will return the URP to the proposer with a brief explanation for the reason for the rejection. A copy of this communication is sent to the TC.

Following approval and contract finalization, the sponsoring TC will establish a Project Monitoring Subcommittee (PMS) to oversee the progress of the project and to approve the final report.

7.2 URP Review form used by RAC and PES Reviewers

[\(TOC\)](#)

Project ID		
Project Title		
Principal Investigator (PI)		
Cost / Duration		
Classification: Research or Technology Transfer		
	<b>URP Criteria</b>	
Check List Criteria	<b>VOTED NO</b>	<b>Comments &amp; Suggestions</b>
<b>Innovation:</b> Is the proposed research innovative in concept and application?		
<b>Distinctiveness:</b> Does the proposed research involve unique approach, skills equipment which otherwise are not available to any other researchers?		
<b>New Research Topic:</b> In this a new subject of research which TCs have not yet proposed?		
<b>Timeliness:</b> Would a significant opportunity be lost if the project had to go through ASHRAE Research open bid process?		
<b>Co-funding:</b> Is significant co-funding or cost sharing available for the proposed research?		
<b>AT LEAST ONE "YES" VOTE ABOVE IS REQUIRED TO QUALIFY FOR FURTHER CONSIDERATION AS A URP. IF THERE IS NOT AT LEAST ONE "YES" VOTE ABOVE, MARK "REJECT" BELOW</b>		
<b>State-of-the-Art (Background):</b> The proposal should include some level of literature review that documents the importance / magnitude of a problem.		
<b>Advancement to the State-of-the-Art:</b> 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?		
<b>Relevance and Benefits to ASHRAE:</b> 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.		
<b>IF ABOVE THREE RTAR REVIEW CRITERION ARE NOT ALL SATISFIED – MARK "REJECT" BELOW</b>		
<b>Proposed Project description Correct?</b> Are there technical errors and/or technical omissions that the WS has that prevents it from correctly describing the project? If there are, then reject the proposal		
<b>Task Breakdown Reasonable?</b> 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 reject the proposal.		
<b>Adequate Intermediate Deliverables &amp; Critical Project Milestones Identified?</b> 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.		
<b>Proposed Project Doable?</b> Can the project as described in the proposal be accomplished? If difficulties exist in the proposal that prevent a successful conclusion of the project, then the project is not doable. In this situation, reject the proposal		
<b>Time and Cost Estimate Reasonable?</b> The time duration and total cost of the project should be reasonable so that the project can be as it is described in the proposal.		
<b>PI Qualifications:</b> Is PI adequately qualified to successfully complete the proposed research? Does PI has enough resources and access to suitable laboratory and equipment to perform the research? If not, then reject the proposal.		
<b>THE ABOVE CRITERIA ARE SIMILAR TO THOSE FOR WORK STATEMENT EVALUATIONS. PLEASE EVALUATE SIMILAR TO WORK STATEMENT</b>		
<b>Decision Options</b>	<b>Decision</b>	<b>Approval Conditions</b>
ACCEPT		
REJECT		

### 7.3 Guidelines for Unsolicited Research Proposals

One of the ways in which ASHRAE research projects are initiated is through the Unsolicited Research Proposal (URP). These are proposals, which are developed and planned by a researcher and then presented to ASHRAE with a request for full or partial funding. The URP should include the following information.

1. Title

2. Executive Summary

(100 word statement that could be used at the BOD level to succinctly summarize the current state-of-the-art, the advancement this project is expected to accomplish, and its value to ASHRAE and society in general.)

3. Applicability to ASHRAE Research Strategic Plan

(List specific goals of the current ASHRAE Research Strategic Plan this project will support by name and number (e.g., Goal 3 - To reduce significantly the energy consumption for HVAC&R, water heating and lighting in existing homes). State how the proposed project will help achieve the goals. If the project does not contribute to any of the goals in the ASHRAE Research Strategic Plan, a strong justification of the need for the research must be provided, and the proposal will have a lower likelihood of success. The current ASHRAE Research Strategic Plan can be found on the ASHRAE.org Web site under the Research page.)

4. Application of Results

(List handbook chapters/special publications etc. to be affected by results of this project, if known. Explain how the results of the proposed project will be disseminated to HVAC&R industry and society in general. What are the practical benefits expected from this research?)

5. State-of-the-Art (Background)

(Description of the amount and quality of past research, and quantify existing gaps.)

6. Advancement of the State-of-the-Art

(Quantitative estimate of the improvement expected from this research [i.e. x% energy reduction in product y or building type z, x% increase in heat transfer coefficient between y and z, or x% reduction in design time to do y, etc.], and explain why this information is needed by the public or by industry.)

7. Justification and Value to ASHRAE

(Identification by number, profession, or industry the ASHRAE members who will benefit. State the likelihood and how the improvement would be adopted by industry.)

8. Objectives - A paragraph describing what this URP intends to accomplish.

(Explanation of project's goals and how this project will accomplish its intended advancement to the state-of-the-art [i.e. a computer simulation will be used to do x, a computer simulation will be developed for x and verified using laboratory data from tests y and z, field test data will be obtained from x and used to do y].)

9. Scope/Technical Approach

(Provide a complete description of technical approach and task statement. Describe the parameters of the research project, including such items as: subject matter to be explored; materials, equipment, literature or other variables to be researched; materials, equipment, etc to be excluded from the project; outline the research methods to be used; description of the standards to be followed; discussion of how the data is to be reduced, analyzed and presented; description of the format for the reported results; if appropriate, describe project phases.

It is important for the scope of a research project to be broken down into tasks or phases, where a task will yield results of interest to the TC/TG/MTG/SSPC and the Project Monitoring Subcommittee (PMS), or where the results of a task will significantly define how subsequent tasks will be carried out. Make sure that the project objectives are reflected in the tasks. The URP should specify deliverables corresponding to these tasks in the "Deliverables" section to facilitate project monitoring by the PMS.)

#### 10. Deliverables

(Insert generic ASHRAE requirements listed below plus any project specific requirements.)

Progress, Financial and Final Reports, Research or Technical Paper(s), and Data shall constitute the only deliverables

("Deliverables") under this Agreement and shall be provided as follows:

a. Progress and Financial Reports

Progress and Financial Reports, in a form approved by the Society, shall be made to the Society through its Manager of Research and Technical Services at quarterly intervals; specifically on or before each January 1, April 1, June 10, and October 1 of the contract period.

Furthermore, the Institution's Principal Investigator, subject to the Society's approval, shall, during the period of performance and after the Final Report has been submitted, report in person to the most applicable Technical Committee/Task Group (TC/TG or Committee) at the annual and winter meetings, and be available to answer such questions regarding the research as may arise.

b. Final Report

A written report, design guide, or manual, (collectively, "Final Report"), in a form approved by the Society, shall be prepared by the Institution and submitted to the Society's Manager of Research and Technical Services by the end of the Agreement term, containing complete details of all research carried out under this Agreement. Unless otherwise specified, six copies of the final report shall be furnished for review by the Society's Project Monitoring Subcommittee (PMS).

The Final Report shall include an Executive Summary of approximately 800 words that includes the need that initiated the project, a brief description of the technical approach, the results and how the results will benefit the industry and/or the public.

Following approval by the PMS and the TC/TG/MTG/SSPC, in their sole discretion, final copies of the Final Report will be furnished by the Institution as follows:

- An executive summary in a form suitable for wide distribution to the industry and to the public.
- Two bound copies
- One unbound copy, printed on one side only, suitable for reproduction.
- Two copies on disk or CD-ROM; one in PDF format and one in Microsoft Word.

c. Science and Technology for the Built Environment or ASHRAE Transactions Technical Paper

One or more papers shall be submitted first to the ASHRAE Manager of Research and Technical Services (MORTS) and then to the "ASHRAE Manuscript Central" Website-based manuscript review system in a form and containing such information as designated by the Society suitable for publication. The papers should be submitted as either Research Papers for Science and Technology for the Built Environment or Technical Paper(s) for ASHRAE Transactions. Research papers contain generalized results of long-term archival value, whereas technical papers are appropriate for applied research of shorter-term value, ASHRAE Conference papers are not acceptable as deliverables from ASHRAE research projects.. The paper(s) shall conform to the instructions posted in "Manuscript

Central” for an ASHRAE Transactions Technical or Science and Technology for the Built Environment paper. The paper title shall contain the research project number at the end of the title in parentheses, e.g., (xxxx-RP).

Note: A research or technical paper describing the research project must be submitted after the TC has approved the Final Report. Research papers may also be prepared before the project’s completion, if it is desired to disseminate interim results of the project. Contractor shall submit any interim papers to MORTS and the PMS for review and approval before the papers are submitted to ASHRAE Manuscript Central for review.

d. Data

The Institution agrees to maintain true and complete books and records, including but not limited to notebooks, reports, charts, graphs, analyses, computer programs, visual representations etc., (collectively, the “Data”), generated in connection with the Services. Society representatives shall have access to all such Data for examination and review at reasonable times. The Data shall be held in strict confidence by the Institution and shall not be released to third parties without prior authorization from the Society, except as provided by GENERAL CONDITION VII, PUBLICATION. The original Data shall be kept on file by the Institution for a period of two years after receipt of the final payment and upon request the Institution will make a copy available to the Society upon the Society’s request.

e. Project Synopsis

In addition to the approximately 800 word summary in the final report, Contractor will prepare a written synopsis totaling approximately 100 words in length and written for a broad technical audience. The synopsis shall document 1. Main findings of research project, 2. Why findings are significant, and 3. How the findings benefit ASHRAE membership and/or society in general. The synopsis shall be submitted to the MORTS by the end of the Agreement term for publication in ASHRAE Insights and on the Research Page of the ASHRAE Website ( for keyword searches but Internet users) .

The Society may also request the Institution submit a technical article suitable for publication in the Society’s ASHRAE Journal. This is considered a voluntary submission and not a Deliverable. Technical articles shall be prepared using dual units; e.g., rational inch-pound with equivalent SI units shown parenthetically. SI usage shall be in accordance with IEEE/ASTM Standard SI-10.

(The above deliverables are necessary, but not sufficient, to monitor a research project. The PMS and the sponsoring TC have the responsibility to review the contractor’s on-going activities and intermediate results, to ensure that the methods used and results obtained will be valid and well-enough substantiated to be labeled as “ASHRAE-approved findings.” Proper oversight cannot wait until the final report, when most of the budget has already been expended.

Therefore, each major task or phase of the research method outlined in the Scope should also be linked to a deliverable report, memorandum, or summary. These in-progress deliverables should not add to the cost of the project, as they will most likely become chapters of the final report. However, they should help the TC avoid unpleasant surprises due to the research not being conducted according to the TC’s expectations. Examples of deliverables that could be required during the project include:

- If one task is a literature review, then the deliverable could be an annotated list of references and conclusions/summary of the current state of the art.
- If the contractor must propose specific sites (e.g., buildings), experiment topologies (e.g., duct configurations), materials (e.g., refrigerants, appliances, insulation or building materials), experiment protocols, and/or instrumentation, then short memos describing those proposed methods, materials, etc. should be deliverables to be reviewed and approved by the PMS before moving on to the next research task.

- If analysis of preliminary data or results will decide how to proceed (e.g., CFD models of 12 duct configurations will be used to select 2 duct configurations to be built and subjected to wind tunnel tests), then the contractor should write up the results of the initial analysis, recommend the areas for further more detailed investigation, and justify those recommendations.
- If data from the research are expected to modify or update a Handbook table, then the procedure for developing the updated table from the data should be specified and provided to the PMS as a deliverable. (The final report may also require the contractor to prepare a proposed updated table based on the observed data.)

In short, the technical approach for a research project should be broken down into tasks or phases, and where a task will yield results of interest to the TC and the PMS, or where the results of a task will significantly define how subsequent tasks will be carried out. The URP should specify such intermediate deliverables for the PMS to review. This approach will make it easier for the PMS and MORTS to gauge progress and technical merit of on-going ASHRAE research projects, and will provide a framework for the cognizant TCs to provide technical oversight and assistance to identify and correct problems as they occur.)

#### 11. Schedule

Provide a description of Critical Project Milestones and the likely month of completion based upon project's duration. List for example major project intermediate deliverables such as a completed literature review or the availability of initial test results or major project events such as the completion of the test fixture or access granted to field site as a critical project milestone that could have a significant negative impact on the overall project if missed or significantly increase the risk that the project will fail and in what month it is likely to expect completion of the critical project milestone based upon the contractor's estimated duration of the project

#### 12. Costs

Detail breakdown of expenses into categories and itemized list of equipment, travel, subcontracts, and other direct expenses; Timing of expenditures; Description of cost sharing of proposing organization or others.

#### 13. Personnel

Education, experience and expertise of researchers that qualifies them to perform the work.

#### 14. References

List references cited in the proposal.

A copy of the URP, containing a completed "Application for Grant of Funds" form, should be submitted to the Manager of Research & Technical Services (MORTS), who will then distribute it to the appropriate research liaison for review and evaluation.

The Research Administration Committee (RAC) normally meets in late June and late January of each year, so URP's should be submitted by mid-May or by mid-December to be considered for the next meeting. The results of the reviewing committees' actions will be made known to the proposer by mid-February or mid-July.

Proposals should be submitted to:

MANAGER OF RESEARCH & TECHNICAL SERVICES  
ASHRAE  
1791 Tullie Circle, NE  
Atlanta, GA 30329  
MORTS@ashrae.net

**UNSOLICITED RESEARCH PROPOSAL (URP)  
DISCLOSURE ACKNOWLEDGEMENT**

1. ASHRAE recognizes the need to encourage innovative research proposals which address the needs of ASHRAE members and society in general. In order to be considered for funding, URPs should fall within the general research goals of the Society but not overlap significantly with ongoing or planned research activities of individual TC (or TG, MTG w/research authority, SSPCs or other committees authorized to sponsor research projects). Unique and innovative projects that cut across research activities within different TCs are especially welcomed.
2. URPs will be accepted only with the understanding that they are non-confidential, although every attempt will be made to respect the proprietary nature of the proposal. This non-confidentiality will permit, if need be, a modification of the URP into a Work Statement which better meets the needs of the Society and which may be distributed as part of a Request for Proposal to numerous researchers for competitive bidding.
3. If a URP is received which addresses a topic already contained in the ASHRAE Research Implementation Plan or under development within a TC, the URP will be returned to the proposer with an explanation as to its status in the Research Implementation Plan or applicable TC research plan unless the interests of the Society are better served by its consideration.
4. If the URP is considered for funding, then the Research Activities Committee (RAC) will be responsible for managing the evaluation process.
5. Unsolicited proposals will only be accepted by the Society upon receipt of a signed acknowledgment of this Procedure.

I have read and understand the above policy on disclosure of Unsolicited Research Proposals (URPs) submitted to ASHRAE

Signed: \_\_\_\_\_  
Principal Investigator

Date: \_\_\_\_\_

Printed Name and Title: \_\_\_\_\_

Signed: \_\_\_\_\_  
Authorized Representative of Proposing Institution

Date: \_\_\_\_\_

Printed Name and Title: \_\_\_\_\_

Institution (if applicable): \_\_\_\_\_

Title of Proposal: \_\_\_\_\_



**ASHRAE APPLICATION FOR GRANT OF FUNDS**  
(to be completed by Applicant)

- 1.0 Title: \_\_\_\_\_
- 2.0 Principal Investigator (P.I.): \_\_\_\_\_
- 3.0 Name of Contracting Institution: \_\_\_\_\_  
Mailing Address of P.I.: \_\_\_\_\_  
  
E-mail address of P.I.: \_\_\_\_\_  
Phone No. of P.I.: \_\_\_\_\_  
Fax No. of P.I.: \_\_\_\_\_  
  
Other Key Personnel: \_\_\_\_\_
- 4.0 Any subcontractors: \_\_\_\_\_
- 5.0 Objective & Scope: \* \_\_\_\_\_
- 6.0 Project Start Date: \_\_\_\_\_ Total Project Length: \_\_\_\_\_
- 7.0 Total Cost: US\$ \_\_\_\_\_ ASHRAE Funding Requested: US\$ \_\_\_\_\_
- 8.0 Details of Financial Support:
- |                                |          |                            |
|--------------------------------|----------|----------------------------|
| a) Professional Salaries       | \$ _____ | Total Person Months _____  |
| b) Research Assistants         | \$ _____ | P.I. Months or hours _____ |
| c) Fringe Benefits (        %) | \$ _____ |                            |
| d) Equipment                   | \$ _____ |                            |
| e) Supplies & Materials        | \$ _____ |                            |
| f) Computer Costs              | \$ _____ |                            |
| g) Travel & Communications     | \$ _____ |                            |
| h) _____                       | \$ _____ |                            |
| i) Total Direct Costs          | \$ _____ |                            |
| j) Indirect Costs ( %        ) | \$ _____ |                            |
| k) TOTAL                       | \$ _____ |                            |
- 9.0 Qualifications of Principal Investigator: \* \_\_\_\_\_
- 10.0 Signature of Project Manager or P.I.: \_\_\_\_\_  
Title: \_\_\_\_\_ Date: \_\_\_\_\_  
  
Signature of Executive Officer of Institution: \_\_\_\_\_  
Title: \_\_\_\_\_ Date: \_\_\_\_\_

Key personnel were (        ) were not (        ) involved in writing the ASHRAE request for proposal for this project.  
\* All sections must be completed. Use of terms such as "See Attached Proposal" may result in rejection of proposal.

## ADDITIONAL INFORMATION FOR CONTRACTORS

In preparing a response to this request-for-proposal, contractors should be aware of, and be agreeable to, the following ASHRAE policies, procedures, traditions and contractual requirements. Costs for meeting these should be considered when preparing research proposal budgets.

By submitting a proposal, the Principal Investigator is acknowledging he/she understands and agrees to comply with the policies listed below. The inability or unwillingness to comply should be pointed out in the transmittal letter accompanying any proposal or should result in no proposal being submitted.

1. It is the practice of ASHRAE to use fixed price contracts for research projects. Other contract forms, such as cost plus fixed fee, will be considered only in exceptional cases, and such proposals are discouraged. Unlike some other government or foundation research sponsors, ASHRAE does not approve cost extensions nor accept scope reductions except in the most unusual of cases. Such cases reflect unfavorably on the contractor with regard to future work.
2. All fiscal values should be stated in U.S. dollars.
3. Twenty five percent of the contracted sum will be withheld pending completion of the work. Fifteen percent will be paid upon submission of the final report and the remaining ten percent upon completion and acceptance of all contract requirements. The initial seventy-five percent of the total sum is paid in equal quarterly progress payments during the period of performance. Except for the first payment, which is made within thirty days of contract initiation, all progress payments are made contingent upon receipt of a quarterly progress report.
4. The winning bidder is required to meet with the PMS via a site-visit or a conference call at the start of the project to review the project's scope. The results of this meeting shall be summarized by the contractor in the first progress report.
5. During the period of the contract and following submission of the Final Report, the Principal Investigator is expected to personally address the sponsoring Technical Committee or Task Group and report on the progress of the project at each Annual and Winter ASHRAE meeting.
6. A Technical Paper shall be prepared in a form suitable for presentation at a Society meeting and the author should be prepared to attend such a meeting to make the presentation. In the abstract of this paper, the author should refer to the volume(s) and chapter(s) of the ASHRAE Handbook series related to the work reported and state in the conclusion the possible effect of the research on the technological base.

All Deliverables under this Agreement and voluntary technical articles shall be prepared using dual units; e.g., rational inch-pound with equivalent SI units shown parenthetically. SI usage shall be in accordance with IEEE/ASTM Standard SI-10.

7. ASHRAE, in return for their financial support, expects that the sponsored research will be reported first at an ASHRAE meeting and in an ASHRAE publication. This may be ASHRAE *Transactions*, the ASHRAE *Journal*, or the *International Journal of Heating, Ventilation, Air-*

*Conditioning and Refrigerating Research.* The Principal Investigator should be willing to wait for this to take place before presenting the work elsewhere. The submission of papers for publication by ASHRAE shall be made to the Manager of Research and Technical Services.

8. Any patentable inventions or copy written computer programs developed as a result of this research shall be made available to ASHRAE in recognition of their financial support of the work.
9. Proposers are encouraged to utilize undergraduate or graduate engineering students where appropriate in conducting this research in order to assist them professionally and financially in their education and in increasing their interest in the HVAC&R industry.
10. ASHRAE's proposal evaluation committee will make the primary recommendation regarding the selection of a contractor. While bidders may be given some information on their and competitors' scores, ASHRAE is not obligated to do so and will not become involved in negotiating, explaining or defending the decisions made.
11. One section of the final report will be entitled "Utilization" and will state:
  - a. ASHRAE Handbook volume(s) and chapter(s) to which the research is related.
  - b. Aspects of the research confirming present knowledge or extending present knowledge.
  - c. Suggestions for change in the Handbook attributed to the research conducted.
  - d. Suggestions for further research identified through that completed.
12. If invited, the Principle Investigator shall speak at an ASHRAE chapter or regional meeting on the subject of his/her research or research in general. The chapter or region extending the invitation shall reimburse out-of-pocket expenses incurred.
13. The signed original of this document should be enclosed with the proposal's letter of transmittal. Multiple copies are not desired.

The above conditions are acceptable:

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Principal Investigator (date)

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Institution Authority (date)