TO: RAC and Mike Vaughn

FROM: T.C. 10.5

DATE: May 1, 2006

SUBJECT: Response to 11/4/05 RAC comments on the first submission of RTAR 1433, "The Effect of Loss of Vapor Barrier Integrity on Insulation Performance for Facilities Operating below 0°F."

QUESTION 1:
The revised RTAR will need to match the 2005-2006 Society year format, particularly with regard to the Society's strategic plan for research. Estimate duration of project.

RESPONSE 1:
We have used the most recent RTAR format to submit this time, including moving information on the compliance with the Society's strategic plan from the *Justification and Value to ASHRAE* section to the front. We have also added project duration under estimated cost. We estimate 36 months will be necessary because the experiments will take a long time to perform due to slow movement of water vapor etc.

QUESTION 2:
Based on their scope and expertise, TC 4.4 – Building Materials and Building Envelope Performance should be a strong supporter and co-sponsor for this research. Why have they not bee approached yet? All interested TCs should be contacted about this TRAT before it is resubmitted.

RESPONSE 2:
The chair of TC 10.5 has been tasked with approaching TC 4.4 with information on this RTAR. TC 10.5's secretary will be/has approached TC's 10.1, 10.3, 10.8 and 10.9 with information on this RTAR as well to seek their co-sponsorship.

TC 4.4 was not approached initially because the scope of this RTAR is to look at the loss of insulation integrity below 0°F. It has been our experience that TC's outside of section 10 have had little knowledge of, nor interest in applications at such low temperatures.

QUESTION 3:
It is unclear how the research will "enable optimum performance of insulated enveloped to be achieved and maintained." It will identify the magnitude of the energy and operating cost losses (but maybe not the subsequent structural damage) if there is a breach in the vapor barrier. It doesn't address how to prevent this or what to do if it occurs. The research may be needed, but the objectives section does not match {"value" to ASHRAE section (objectives are greatly limited).

RESPONSE 3:

We have changed the wording to try and show that the research will generate better understanding of the mechanisms and rates for common vapor barrier systems that will allow the better systems and methods to be selected preferentially. I do not think that we need to focus on structural damage because we want the insulation to never get to that state i.e. the research is about avoiding structural damage due to water vapor transport because once structural damage has occurred it is not really reversible (small amounts of water and ice can be reversed but if these result in delamination then it is too late).

QUESTION 4:
Objective #1, literature review and manufacturer contact to identify best construction practices to ensure effective and reliable vapor barrier installation, won't generate any new information. Construction details and the quality control thereof are critical to the success of air/vapor barrier systems-not clear that this objective as conceived will provide more than generalities. Objective #4-provide more information on what options the researcher is to investigate. Objective #5-what construction materials and ambient conditions on the outside of the insulation is the contractor to use in tests of the rates of removal of ice and water from insulation after vapor barrier repair?

RESPONSE 4:
The aim of Objective #1 is not to generate new information. However it is a necessary prerequisite for the main part of the research because it will ensure that the system and methods tested under Objectives #2 and #4 are relevant and cover as large a proportion of the population of refrigerated facilities as possible. We would rather leave the exact options and conditions to be defined by the bidder or as a result of completing Objective #1.

QUESTION 5:
TC vote should reflect more support for project from TC than 53% particularly when all members can vote be e-mail.

RESPONSE 5:
We have cleared up the roster to remove inactive members. While not all members have e-mail, other means have been used to obtain a vote from all.