Summary

Implementation of ANSI/ASHRAE/ACCA Standard 180 requires a dialog between the responsible party (owner/representative) and the service provider/contractor in order to develop maintenance plan goals, metrics, processes and program revisions/improvements. This document suggests topics and a sequence of questions which these two parties need to explore and discuss together in order to establish a Standard 180 based maintenance program.

The interview process is also intended to uncover the significant benefits of this approach to maintenance - the "value proposition."

Future work is planned to provide clearer guidance on how this interview process might be implemented for each party.

Finalized: January 18th, 2017

Use of this document

This document provides information on Conversing on the value of commercial HVAC quality maintenance.

It is based on an official WHPA Work Product of January 18th, 2017 titled "CQM Committee Standard 180 Performance Objectives to Value Propositions Interview Process" This Work Product was developed by the WHPA Commercial Quality Maintenance Committee.

This document, and also the WHPA Work Product, may be used in part or whole at no charge. Attribution to the Western HVAC Performance Alliance is requested.

We would also ask that you inform the WHPA through info@performancealliance.org if you have made use of either document, so that we can inform and encourage the hundreds of volunteers who donate their time to providing expert HVAC advice in order to support energy efficiency objectives.

STANDARD 180 BACKGROUND

This WHPA Commercial Quality Maintenance (CQM) Committee work product is intended to provide guidance and suggestions to those parties responsible for overseeing commercial building HVAC system maintenance as well as for those who perform and deliver those maintenance, repair, and equipment replacement services. It is hoped that these suggestions might also be helpful to utility staff responsible for designing and implementing commercial maintenance programs based on this standard and participants.

The Commercial Quality Maintenance Committee and its working groups have been evaluating this Standard since 2009 in an effort to gain a better understanding as well as to offer suggested revisions. Most earlier efforts dealt primarily with technical aspects of the standard such as developing a new Section 5 Economizer maintenance task table and suggesting revisions to Rooftop Unit Table 5-22. The original Standard used fairly general statements to simply "name" each task which the Committee believed needed far greater clarification if that Standard was to be implemented consistently. The "what" needed a "how to" explanation.

Standard 180, 2008, was the first American national standard focused on HVAC commercial maintenance. Most standards focused on new buildings and new equipment or system installation. Standard 180 was also established and intended to be a minimum Standard, though it went well beyond common practice in this industry. The Standard was never intended to limit an owner, responsible party, or their service provider to these minimum practices. Users are encouraged to read and study the Standard's FORWARD to understand that much more than the "minimum" could be elected and justified. Owners were encouraged to consider additional energy conservation measures as well as technology improvements and upgrades to increase system efficiency and to optimized system performance.

WORK PRODUCT BACKGROUND

Many users of Standard 180 have believed that the equipment maintenance task tables found in Section 5 were the core of this Standard and simply skipped past Sections 1 through 4. Often their reason for this was that an owner or property manager needed to produce a scope of work for securing maintenance agreement bids. A common industry practice was to secure multiple bids for a fixed list of tasks at a fixed price and select the least expensive one. Their assumption was that all work would be performed equally well. Not a very sound assumption according to Committee members.

Many commercial buildings simply have a "scheduled filter replacement," very minimal inspections, or a "run to failure/breakdown" program thinking that these are the least expensive approaches because of their lower "up front" cost. What this approach doesn't take into account with only looking at the visible contract cost—lowest bid approach—is that it is really only deferring maintenance, at best. At its worst, such an approach causes expensive repairs, avoidable premature equipment failure, and major capital expenditures. The right answer? Implement a sufficiently comprehensive maintenance program intended not only to keep "visible" contract costs in line but also to avoid most or all "invisible" costs, like excessive energy consumption, occupant discomfort and complaints, expensive repairs, and even more expensive premature equipment failure and replacement.

According to the Standard, it was the owner/responsible party NOT the service provider who was "responsible" for what kind of maintenance program would be implemented. Some property managers/owners are very capable at this with an adequate understanding of HVAC systems and what it takes to protect their operation. But for many, this was not their area of expertise, interest, or primary responsibility. They need to depend upon the knowledge of an honest service provider to work through this process of developing an adequate approach to HVAC system maintenance. The sections of Standard 180 prior to the maintenance task tables, and especially Section 4 Implementation, state in fairly general terms the requirements of the Standard and the "what." How to get at the "how" of things—create concrete performance objective goal statements—was not spelled out in detail or with

examples. This Committee concluded that the first practical step in developing that maintenance program would require a structured dialogue and a series of discussions or interviews to gather important background information and to clarify the owner/responsible party's goals.

PURPOSE OF THIS WORK PRODUCT

The goal of this Work Product was to provide a framework for that critical owner/service provider dialogue and education to identify and state:

- Key topics and issues which needed to be discussed in order to develop a lean but comprehensive maintenance program
- What the owner/responsible party really wanted to accomplish and how they would know when or if those goals were accomplished
- Key performance objectives or goals and "translate" or link each to a benefit
- The cumulative benefits which could clearly far outweigh a higher "up front" maintenance (contract) cost

That collection of goals and benefits would constitute the "value proposition" for undertaking a Standard 180-based approach to maintenance.

That framework for a customer "interview process" was intended to provide the "front end" of a larger process that would include

1) Formulating a solid maintenance program,
2) Details on how to implement the program,
3) Examples for evaluating and reporting progress toward goals and
4) A full-circle approach for refining the program on a continuous improvement basis.

This work product was intended to be merged with efforts of the CQM Standard 180 User Guide Working Group in the future to develop a Standard 180 User Guide to address that entire process.

Customer Interviews

The dialogue which Standard 180 encouraged could be initiated by either party, the building owner/responsible party, or a prospective service provider. In either case, what was most important was that all crucial topics got discussed and that information necessary to making sound decisions was gathered, reviewed, and analyzed together so that all parties reached a common understanding and agreement on how to proceed.

Interview objectives were broken out into three groups of related questions in order to:

1) Determine customer operational priorities,
2) Scope the customer financial budget/limitations, responsibilities, decision-making process, and commitment, and
3) Understand how the customer thought they would "measure" success.

The output was intended to yield a prioritized set of goals they wanted to achieve, scope these goals within their budget, and have measurable means to demonstrate achieving these goals.

Additionally, this Committee thought that this process, which included educating the customer about relevant HVAC information, would help the owner/responsible party more thoroughly understand the value which could be delivered by achieving the selected goals. The process would help convert or translate performance objectives into "value propositions," the reasons why adopting this approach to maintenance was more than worth the higher upfront and visible (contract) maintenance cost.

Preliminary Questions to Answer Prior to a Face-to-Face Meeting

This information could be requested by the prospective service provider, in no particular order, prior to any sit-down meeting. The owners' willingness to seek out and provide useful information will be the gauge of their commitment to getting the greatest value for their total maintenance and HVAC spend and not in just obtaining the lowest bid price. It also would give the service provider a better idea of how that organization made maintenance, service/repair, and capital expenditure decisions and who had responsibilities for each part of the total budget. In addition, it would provide the service provider with some insight into whether the owner was aware of all the elements which contribute to their total maintenance-related spend.

- Building primary use? – Restaurant, office, auditorium, classroom, storage, meeting rooms, etc.
- Owner occupied or leased tenant space?
- Building age, last HVAC system major renovation? – implied code level as well as age of equipment.
- Number of rooftop units? – did the owner have an inventory of all major HVAC equipment?
- How many, what size, general efficiency/EER level? Mostly single zone constant volume or some number of multizone, variable volume units? Could use Google map for a rooftop survey count of packaged equipment.
- Square footage of the occupied space or building?
- Who are you talking with? Owner, property/facility management?
- Who is responsible for HVAC maintenance and service? For equipment replacement?
- How are maintenance utilities paid? Triple Net? Single zoned HVAC?
- Do they know how much electricity bills are? Can and will they supply several years of past electrical billing data? Try to get copies of several years of utility bills in advance or to be reviewed at meeting.
- Is there a current maintenance program? Description? Past contract copy to review coverage and scope of work details.

Face-to-Face Meeting

During meeting, address questions from all three groups. They are grouped here for the reader's convenience to provide an overview to the entire process. Questions are grouped in order to show those related to a similar topic/issue. But, in an interview, it would be important to work through these questions in an order that suited the client's preference. It was not intended for the service provider to go through these interview questions in a strict, rigid manner. Each client discussion would be unique. Both parties shared a responsibility to cover all critical topics before ending.

Group 1. Determine Customer's **HVAC System Issues and Priorities**: The first questions determine

customer's objectives and priorities. Coupling this with the information retrieved earlier, this should scope the operational situation with the customer.

Group 2. Determine **Budget or Financial Costs and Degree of Commitment**: The second set questions determines customers' financial objectives, priorities, and budgets.

Group 3. Determine Customer's **HVAC Performance Evaluation Metrics**: The final set of questions determines the customer's metrics for measuring maintenance program and service success. This helps determine the sophistication of the customers and their systems. Coupling this with the information retrieved earlier, this should help define how to establish metrics for a maintenance program relationship and capture the data needed to determine the applicable evaluation metrics – whether ROI, uptime, or improved occupant comfort – for customer to evaluate results vs. expectations. Evaluation and reporting keeps the service provider in touch with his client and encourages both parties to attempt continuous improvement for their maintenance program.