

# Managing the Line between Cx Provider and MEP Coordinator

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## Synopsis

It is easy for the knowledgeable commissioning (Cx) provider to find himself functioning in the role of mechanical, electrical, & plumbing (MEP) coordinator. Too often, either the person acting in the role of MEP coordinator is too busy with other issues, or is not knowledgeable enough to effectively coordinate many of the Cx-related issues (especially controls issues). A vortex of needed expertise and attention is created that can have a strong pull on the Cx provider. Responding effectively to this pull is a challenge that is important to the success of the project.

Topics to be discussed include:

- Roles of Cx provider and MEP coordinator
- Potential problems with the Cx provider acting in the role of MEP coordinator.
- Determining what tasks, of those near the boundary between MEP coordinator and Cx provider, are ok for the Cx provider to perform.
- How to effectively work with an MEP coordinator.

## About the Author

Kevin Fish has been in the mechanical systems and building quality industry for 15 years. He is experienced in commissioning, troubleshooting of mechanical systems, cleanroom performance testing, test and balance (both air and hydronic), and electrical power monitoring. He has worked extensively in facility types that include health care, laboratory research, high tech fabrication, office buildings, and schools. Mr. Fish has particular interest in using trend data from building control systems to confirm building operation. He has been with Northwest Engineering Service, Inc. since 1997.

Mr. Fish has a Bachelor of Science in Math Education from Oregon State University, a Bachelor of Science in Mechanical Engineering from Portland State University, a professional engineering license in Oregon, and is a LEED accredited professional.

## Introduction

It is easy for the knowledgeable commissioning (Cx) provider, as an independent representative of the owner, to find himself functioning in the role of mechanical, electrical, & plumbing (MEP) coordinator, an employee of the general contractor. Too often either there isn't an MEP coordinator, or he/she is too busy with other issues, or is not knowledgeable enough to effectively coordinate many of the Cx related issues. A vortex of needed expertise and attention is created that can have a strong pull on the Cx provider. Responding effectively to this pull is a challenge that is important to the success of the project.

Cx providers can provide great value, but aren't in the right role to be performing some tasks. Although knowledgeable and well intentioned, Cx providers may actually cause problems if they attempt to perform tasks that should be done by the contractor. Further, an owner / client shouldn't have to pay a Cx provider to do what the contractor should be doing.

## Roles of Cx Provider and MEP Coordinator

Before discussing where the line of responsibility should fall on particular tasks, a quick review of the roles of Cx provider and MEP coordinator is in order.

### ***The Role of Cx Provider***

Although there are various ways to define the role of Cx provider and a myriad of tasks which can comprise a Cx scope, in a nutshell the Cx provider's role is to implement a quality control process on building design, construction, and turnover. To get more specific without listing individual Cx tasks, the following are some worthy overarching Cx goals:

- Work to maintain the attention of the project team on quality.
- Identify and ask questions on issues that tend to be, or look like they would be, overlooked, and to help ensure that issues are properly thought through and addressed.
- Understand not only the required performance of commissioned equipment and systems, but the required interactions between systems.
- Conduct interactions in a manner that fosters communication, respect, and a team approach.

Perhaps because of the numerous problems that tend to arise with regard to controls and system interactions, Cx providers are often very knowledgeable in control systems and the needed interactions between various systems. This knowledge can be a great benefit, but can also lead to problems, as will be discussed.

### ***The Role of MEP Coordinator***

Like the Cx provider, the MEP coordinator is responsible for many separate tasks. In a nutshell, the MEP coordinator's responsibility can be defined as coordinating and directing the activities

of the MEP subcontractors to complete the work in an efficient and timely manner. Ideally, the MEP Coordinator would be knowledgeable in all facets of each of the mechanical, electrical, and plumbing scopes of work, including TAB (testing, adjusting & balancing), building control systems, fire alarm systems, lighting control systems, emergency power systems, etc.

Not all building projects have a designated MEP coordinator. On some projects, the general contractor's project superintendent acts in the role of MEP coordinator without carrying the title. The bigger the project, the more likely there will be someone designated as the MEP coordinator. For the purposes of this paper, "MEP coordinator" refers to the general contractor's representative who is performing the role of MEP coordinator, whether or not he/she carries the title.

### ***Crossing the line between roles***

It is rare to have an MEP coordinator who has a thorough understanding of specialty systems, in particular control systems. Even if MEP coordinators have a good understanding of control and specialty systems, they can be so busy with physical installation issues that they don't have the time to adequately study and understand the needed control actions and system interactions – an endeavor which takes significant time and focus.

The Cx provider often has the knowledge, and has taken the time to understand what is needed. But just because the Cx provider may be better suited in terms of knowledge, availability, interest, etc., it may not be in the best interest of the project to have the Cx provider perform tasks that should be performed by the general contractor.

### **Upside to Cx provider acting in the role of MEP coordinator**

The primary benefit to having the Cx provider perform in the role of MEP coordinator is that, on certain issues, he may be able to identify and coordinate better solutions.

### **Downsides to Cx provider acting in the role of MEP coordinator**

The potential downsides to a Cx provider acting in the role of a MEP coordinator include the following:

- Cx provider being liable when his proposed solution doesn't work out, when it impacts other trades or activities, or when it doesn't comply with code or desires of authority having jurisdiction.
- Client paying the Cx provider for service that he should be getting at no additional charge from the contractor (or the engineer).
- Cx provider being expected to be involved with and communicating with regard to other coordination issues.
- Cx budget being expended on un-scoped coordination time, possibly with the result that scoped Cx tasks don't get adequate attention.

It may be better not to have a Cx provider than to have one who blurs the lines of responsibility and whose activities have the effect of the contractor not performing their duties as diligently as they otherwise would.

## **Navigating the Line on Specific Tasks**

Let's look at a number of specific tasks done by either the Cx provider or the MEP coordinator, or both, and seek to gain insight on how to maintain appropriate lines of responsibility.

### ***Coordination of MEP physical routing***

Although I have heard Cx providers teaching rules for routing of physical materials (ducts, conduits, pipes, etc.), I see this task as being solely the job of the MEP coordinator.

### ***Scheduling***

Many proposal requests for Cx service include language to the effect that the Cx provider should work with the general contractor to incorporate the Cx schedule into the overall construction schedule. Working this out practically is challenging. The responsibility for the schedule should remain with the general contractor. As soon as a Cx provider thinks that he should be able to dictate schedule, he or she is in for frustration. It may be best for the Cx provider to provide the MEP coordinator and owner with a list of the various needed Cx activities, organized in the order in which they need to occur, and with approximate durations, and let the MEP coordinator do what he will with the project schedule.

### ***Coordination of startup***

For good or bad, the Cx provider often gets involved with coordinating startup. For some systems, the Cx provider may have a clearer picture than the MEP coordinator of what needs to be done in advance of startup, and/or the needed involvement of various trades in startup. Because of this, and because the Cx provider can be enticed by the opportunity for more active, front-line involvement, if not cautious the Cx provider can find himself communicating and coordinating with various sub-contractors in preparation for startup. Doing this can easily involve giving direction to subcontractors, which the Cx provider should not do. So what can the Cx provider do with respect to startup? Without taking on liability that he shouldn't, the Cx provider can communicate with the MEP coordinator regarding startup needs – stopping short of coordinating with sub-contractors.

### ***Controls issues***

Typically there are many controls issues that arise during the course of a project, and often the Cx provider is more knowledgeable of possible solutions and their implications than the MEP coordinator. However, as soon as the Cx provider suggests a certain solution, even if the engineer agrees on the solution, the Cx provider will end up in trouble if the solution doesn't

work out as well as hoped, or if there are unforeseen unfavorable impacts to the project. As much as possible, the Cx provider should frame his input in the form of questions posed to the engineer and/or contractor. If called on directly for a proposed solution, the Cx provider might preface his suggestion with language to the effect, “a possible way to approach it might be...” Although this may seem like a cowardly response, it not only protects the Cx provider, but can work to the benefit of the owner/client by keeping a clear line of responsibility for design with the engineer, and construction with the contractor.

### ***Meetings and meeting minutes***

On a recent job, the project manager for the design/build contractor initially did not want me to attend their MEP coordination meetings. He subsequently changed his mind once he saw how the Cx meetings were run and how issues were getting discussed and resolved. He even seemed happy to have his coordination meeting together with the Cx meeting, and to have me run the entire meeting. Although my ego was fine with this, the Cx budget suffered.

Now I try to avoid attending construction coordination meetings. I try to leave full responsibility for those meetings squarely with the MEP coordinator. I hold my periodic Cx meetings and deliver minutes for these, striving to keep the focus of the Cx meeting on Cx issues (i.e. quality, checklists, access, operations, testing, etc.). However, typically there are coordination type issues which come up during the Cx meetings and warrant attention. When this happens, I try, with mixed success, to restrain myself from leading or documenting the discussion.

### ***RFI's, clarifications, documentation of direction***

One of the things that contributed to me spending an inappropriately large amount of time documenting discussions and decisions on the previously mentioned project, is that it was a design/build project that did not use the RFI (request for information) process for documenting direction. My documentation of decisions was frequently the only documentation. When an RFI process is being used, the Cx provider would do well to ask himself regularly if communications or documentation that he may be tempted to issue would be best left to the RFI process. In the absence of a formal RFI process, the Cx provider needs to be even more careful of where the boundaries of his communications and documentation should lie, and budget accordingly if an increased role seems appropriate.

### ***Punchlists***

Although Cx providers are often skilled at generating and maintaining items lists, the MEP coordinator should be managing the issues lists generated from engineer job observations. The Cx provider may benefit from periodically asking himself if the issues he is tracking center around quality, and if not, why.

## **HVAC response to fire / life safety events**

The interaction between the fire/life safety system and the HVAC & building control system frequently requires discussion and coordination during the construction phase. The design documents often don't fully and clearly identify the details of the needed response to fire alarm (i.e. which air handlers need to be shut down, which system is responsible for shutting down air handlers and closing fire/smoke dampers, what one system needs to communicate to the other, what constitutes a trouble vs. a full fire alarm, etc.). Coordinating the fire/life safety interaction with HVAC & building controls is even more challenging now that there is a new code requirement stipulating that the fire/smoke dampers associated with an air handler close whenever the associated air handler is off.

Since the Cx scope on almost all projects includes testing the sequences of operation of the HVAC control system, the Cx provider needs to know what HVAC actions are supposed to occur upon a fire alarm. When the design information is inadequate, the best approach for the Cx provider might be to present a list of questions for the contractor and engineer to address, then try to stay out of the ensuing discussions while waiting for appropriate answers to be transmitted.

## **Communications with sub-contractors regarding Cx requirements**

Because quality is largely determined by the skill and commitment of the persons having their hands on the work, it is important for the persons performing the work to understand the purpose and procedures of commissioning. A primary Cx task that it is important for the sub-contractor field workers to understand and be committed to is filling out the installation checklists.

One option for how to handle the needed communications with sub-contractors is for the Cx provider to deal with the MEP coordinator (or other designated representative of the general contractor) and to refrain from discussions with the sub-contractors. This helps to keep the Cx provider from blurring the lines of responsibility between the general contractor and his sub-contractors, but can mean that the field workers are less knowledgeable of and committed to the Cx process.

A very different option is for the Cx provider to have extensive interaction with the sub-contractors (i.e. not only in Cx meetings, but also outside of meetings via emails, job visits, etc.) This option tends to result in field workers having a better understanding of the purpose and process of commissioning, and debatably, better compliance and resultant quality. However, this can result in a strained relationship with the MEP coordinator, and/or sub-contractors who view the Cx provider as an unwelcome meddler.

A third and suggested option is for the Cx provider, as much as possible, to restrict his communications to sub-contractors from occurring outside of the presence or knowledge of the MEP coordinator. Periodic Cx meetings would be the primary place for the Cx provider to interact with sub-contractors. In order to get closer to the workers having their hands on the work, the sub-contractor field superintendents can be invited to the Cx meetings, either instead

of, or in addition to the project managers. When sending emails, copying the MEP coordinator or commissioning coordinator is advised.

## **General Guidelines**

The following guidelines for the Cx provider sum up the principles behind the previous discussion:

- Refrain from communicating with sub-contractors in ways that could be construed as giving direction.
- Be careful when tempted to lead discussions with sub-contractors on issues not clearly in the Cx scope.
- When communicating with sub-contractors, as much as possible, do it with the knowledge of the general contractor / MEP coordinator, and always with consideration of their role and interests.

## **Working Effectively with an MEP Coordinator**

It's important to the success of a project for the Cx provider to work effectively with the MEP coordinator. To work well with the MEP coordinator, the Cx provider would do well to keep in mind the primary motivators of the MEP coordinator. MEP coordinators are generally concerned with bringing the project in on-time and on-budget. The on-time goal can be a big driver as the scheduled completion date approaches.

The following are some suggestions to help a Cx provider establish and maintain a productive relationship with a MEP coordinator:

- Respect his position as having authority over the sub-contractors.
- Make it clear that you will ask questions (probably lots of them), but that it's not your role to decide or direct activities.
- Assertively communicate what is needed from him and his sub-contractors for Cx. Let him know you expect a cooperative relationship.
- Find out and respect his desire regarding communications between you and the sub-contractors.
- Listen to him. Talk with him. Consider his interests.
- On any email that might be construed as indicating that he is not performing adequately, be careful to not copy unnecessary parties. Take appropriate preliminary steps to resolve issues directly before alerting his supervisor or the client.
- In all project related activities, conduct yourself in a way that fosters communication and goodwill between parties.

## **When an MEP Coordinator is Ineffective**

The role of MEP coordinator is vitally important to a project's success. And the more complex the project, the less complete and consistent the design, the less experienced and cooperative the sub-contractors, then the more critical it is for the MEP coordinator to be effective. But what if the MEP coordinator appears inexperienced or ineffective?

If this happens, it's prudent to not jump to premature conclusions. Many different approaches and styles can get the job done. Talking with the MEP coordinator about his perspective and concerns may prove enlightening – you may find that there are sufficient reasons for the way things are being handled, or you may find an open door to give some coaching to an inexperienced coordinator. However, if it appears that the job quality is in jeopardy, the Cx provider owes it to the owner/client to communicate the concern.

## **Conclusion**

Although the Cx provider may be capable of performing in the role of MEP coordinator better than the acting MEP coordinator on some project tasks, he should consider the potentially negative effects of doing so before taking on this role.