

Technical Commissioning vs Process Commissioning and Their Applications

M3T Cx Authorities LLC's CEO/President, Monica Mack provides us with an overview of the types of commissioning and their uses.

The M3T Commissioning Family would like to say thank you to BUILD magazine for being announced as the winners of the 2019 Design and Build Award, Most Outstanding Small Construction Business – Texas, USA. In a continuing effort to promote building commissioning as industry, we would like to use this opportunity to discuss the types of commissioning and their uses.

In the January 2019, BUILD Magazine article '3rd Party Commissioning as Risk Management for Commercial Construction', we discussed how 3rd party commissioning can aid in mitigating risk during the Commercial Construction process. The focus of the article demonstrates how commissioning, when engaged early in the Design Phase of a commercial construction project, follows the ISO-3100 Risk Management Process.

For those readers that are not familiar with the building commissioning, we defined commissioning as the systematic process of vetting design intent in a construction process. The origin of modern-day commissioning is a naval-coined term referring to the study, testing, training and qualifying of military technology, and the organized and systematic process in which this vetting is completed. Over the years, commissioning has been adapted for commercial, infrastructure, industrial, mission-critical and specialty uses with healthcare and research leading the way in the commercial sector usage. Commissioning is also a requirement for certification by the USGBC LEED Certification Program, which has aided in awareness of commissioning in the USA.

There are two major types of commissioning, Technical Commissioning and Process Commissioning. Both types are acceptable granted they are implemented correctly. Technical Commissioning is when a commissioning plan is site specific, and forensic in nature when evaluating whether the commercial installation accomplishes an operational goal and works in conjunction surrounding and overall goals. Process Commissioning is often quickly implemented, generic in the nature of how the test and verification are performed. Process Commissioning is often expressed in Check box form.

As previously stated, Technical Commissioning is site specific and forensic in nature. This is because the construction documents are used to create a custom-tailored test plan for your

commercial construction site. Special sequences, custom accessories, equipment upgrades, organizational needs and integration in systems are just some of the considerations that go into the creation of the commissioning plan and the test scripts that will be used to verify the functional and operation of the commissioned equipment. Technical Commissioning often takes longer to prepare and implement; however, it is an exemplary tool in establishing O&M processes, and predicting system response once the installed equipment has been placed into operation.

Conversely, Process Commissioning is quickly implemented and focuses on standard usage. Process commissioning is comparable to an installation checklist where standard procedures are tracked and checked off. However, keep in mind the process commissioning will be full of general goal and functionality objective that can be easily observed, and typically ask that the equipment/system be verified to operate within a target range. Process commissioning test script are often easily identifiable by the checkbox and easy-to-interpret reporting. Equipment evaluated this way are typically commercial "off-the-shelf" equipment/system that often don't have special considerations. Process commissioning is great for evaluating equipment and systems that will be replaced in kind, or/and expanding productivity by adding more of the same components.

Often, both the technical and process commissioning are used during a commissioning project, but they are not interchangeable, so, understanding when and how they should be implemented is very important. Technical commissioning is slower to implement and requires a lot more planning. Therefore, it should be contracted as early as possible in the construction process, such as in the Planning or Design Phase of the construction project. Technical commissioning may not be appropriate for very simple pieces of equipment that do not have many outside parameters to consider during operation. Just as, it may not be necessary for project where you are adding equipment or swapping equipment with like piece of equipment. In that cases, process commissioning may be most effective because a baseline may have already been established and processes implemented. Process commissioning is not appropriate for custom equipment, major pieces of equipment, new construction, substantial upgrades and where processes, and special operation has not been defined or considered prior.



The level and type of commissioning is typically defined in the project specification documentation. However, as an educated consumer, in your review of your project documents, you can safeguard the type of commissioning specified best aligns with your project construction priorities. For example, if your project is time and/or budget sensitive, you may employ a plan that includes simple, "off-the- shelf" equipment, that have short lead time, because this type of equipment typically only calls for process commissioning. Respectively, if quality is the top priority, you may order custom equipment, with process specific features, and special operational sequences. In this instance, process commissioning would not be adequate, so technical commissioning would be suitable. In an effective commissioning plan, both technical and process commissioning could be employed as necessary to ensure you have most efficient, yet effective, commissioning plan for your precise project requirements.

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