



PRESS RELEASE FROM

## **Hill International's Director of Commissioning: Owners Continue Learning (Sometimes the Hard Way) About the Importance of Commissioning**

Posted Jun 18, 2018

When an owner instructed the proposal team to *increase* their commissioning fees, it was a watershed moment in the 30-year career of Hill International's Director of Commissioning Rene Sorra.

"Owners are learning, or have learned the hard way, the value and importance of commissioning," said Sorra. "This owner solicited proposals for commissioning multiple upgrades to a government data center. Apparently the commissioning consultant miscalculated the level of effort it takes to perform proper commissioning in a mission-critical environment, such as a data center."

Sorra continued, "This was an owner who understood the value of commissioning. Unfortunately we don't tend to put hard numbers on the value of commissioning, or gauge its return on investment. If a hotel fails to open as scheduled, the owner starts losing money each day and liquidated damages are assessed. I've been involved in projects that had liquidated damage clauses of \$100,000 per

day. I once commissioned a large financial data center that could suffer this rate of loss per minute if their data center went down. When you follow the proper commissioning process, and have fully commissioned projects, that's much less likely to happen.”

Not all facilities are commissioned the same way and not all commissioning scopes are the same. There are two basic forms of commissioning – Comprehensive and Construction.

Comprehensive commissioning has five basic phases:

Pre-Design (owner's requirements).

Design (accessibility, maintainability, and constructability review).

Construction (equipment pre-functional checks, and functional testing).

Acceptance (O&M, training, and closeout documentation).

Warranty (seasonal testing and performance trending).

Construction commissioning generally emphasizes only the Construction Phase. However, in mission-critical facilities, such as data, the Construction Phase is further defined by the Uptime Institute with sub-levels. The Uptime Institute is the industry's adopted global standard for the proper design, build, and operation of data centers. It sets the standards for tier certification (Tier I through Tier IV), which defines the reliability factor of data centers. For instance, a Tier III data center can cost three times more to build than a Tier II, thus commanding higher cost to lease or buy.

Either way, commissioning proves or disproves proper design and construction. It is the process by which equipment, systems, or a

facility or plant are proven to conform to design documents and specifications. Through careful measurements and testing, commissioning further validates that they function and perform according to design intent. A simple example is confirming if lighting was designed properly, constructed correctly, and illuminates to the level dictated by building codes when the switch is flipped.

“If only it was that easy,” Sorra said. “Something as innocent as a wayward paper clip or a loose lug bolt can blow an entire electrical switchgear, causing massive losses of time and money, as well as potential injuries. These types of accidents are not uncommon when pre-functional checks are not executed through the commissioning process before equipment is activated.”

Commissioning is not just verifying a system’s functionality, but also making certain all equipment and subsystems work effectively and efficiently.

“The unnecessary costs from operating inefficient systems add up quickly,” Sorra said. “If it’s costing you \$1,000 of electricity per month to run a major system, how much money are you wasting if you’re operating that plant at 10% lower efficiency? Moreover, equipment improperly operated will fail prematurely, contributing to higher maintenance costs. These are quantifiable numbers and something we need to emphasize to illustrate to owners the impact on dollars and cents.

“At Hill, we have been educating owners, explaining the commissioning process, and how it is done properly. There is a definite positive return for owners.”

However, too often, Sorra has seen projects with improper commissioning budgets. Some owners include commissioning budgets only because they are mandated by management or regulation. Still others spend the minimal amount only for compliance. This attitude results in selecting less-qualified firms that provide lowball quotes. Even well-qualified commissioning agents may be forced to shortcut the commissioning process to meet budget constraints. The results only give owners a false sense of security and incorrect expectations.

Sorra recalls, “I was asked to re-commission a three-year-old, Gold LEED Certified government building that had unpredictable HVAC performance. After going through the proper commissioning process, the state realized that it could have spent 50% less on commissioning if the building was commissioned right the first time.”

One thing Sorra is sure about, the increased demand for commission services created some hucksters out there hawking commissioning expertise.

“Some design firms will dedicate a few people from their MEP bench or another division and establish a ‘commissioning team,’ but they have little experience doing actual commissioning work,” Sorra said. “Not only are they not experts in commissioning, but there’s also potential conflict of interest when they are commissioning their firm’s design. Although some argue that it’s not a conflict if it’s not the same engineer, most owners prefer not to accept the risk”

“At Hill, we’re different. Because we’re exclusively construction managers, our loyalty is to the owner and to quality control of a project. Quality control is a major focus of commissioning as it

enhances the construction management's quality assurance process without potential conflict of interest. If the owner wants to eliminate doubts about the quality of its systems, you commission it properly with a team you can trust and remove all doubts.”

Sorra said. “That’s why it’s important to educate our industry about proper commissioning. A lot of owners underestimate the risks they take when their systems are not fully commissioned.

Commissioning is about protection: protecting the project, the owner, the equipment and, ultimately, the safety, and the operational cost of the end-users.”

*Hill International, with more than 3,000 professionals in more than 50 offices worldwide, provides program management, project management, construction management and other consulting services to clients in a variety of market sectors. Engineering News-Record magazine recently ranked Hill as the eighth-largest construction management firm in the United States. For more information on Hill, please visit our website at [www.hillintl.com](http://www.hillintl.com).*