

WHITE PAPER / PROACTIVE JOINT COMMISSION EVALUATION

# RETRO-COMMISSIONING JUMP-STARTS HEALTHCARE FACILITY ACCREDITATION PROCESS

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Every three years most U.S. hospitals undergo a comprehensive evaluation by The Joint Commission, the leading accrediting body for the healthcare system. A retro-commissioning assessment can help healthcare organizations preemptively address concerns and better prepare their facilities to meet the patient safety and quality of care standards needed for accreditation.



The Joint Commission accreditation is a gold standard pursued by thousands of U.S. healthcare organizations and programs. With recertification required every three years, The Joint Commission survey provides healthcare organizations an objective process for regularly measuring, assessing and improving performance.

### TARGETED APPROACH

Some organizations choose a limited, targeted approach that focuses only on systems with already recognized problems.

Consider again the airborne contaminant safety risks posed by an improperly calibrated HVAC system. When presented with a problematic reading in a critical space, it is common for technicians to make manual adjustments to correct it, only to inadvertently throw off the balance in adjacent spaces.

Considerable data, testing and analysis are needed to see that controls are calibrated so that every space in a hospital operates according to design. Pressurization is just one concern. Temperature and humidity adjustments can require similar troubleshooting. Equipment degrades with time and sensors lose calibration and drift. Staying abreast of a finely tuned, high-performing system requires effort. Experienced facility managers know that retro-commissioning is just one more tool in their toolbox.

Retro-commissioning procedures can be employed to reestablish appropriate air pressure, temperature and humidity relationships as well as to return a building automation system back to its original design intent and calibration. Depending on the system's age and sophistication, the retro-commissioning process may also include recommendations for automated systems to monitor differentials between spaces and alert staff in real time when proper standards are not maintained.

### COMPREHENSIVE APPROACH

A healthcare system seeking a more comprehensive review of its systems and equipment may opt instead for a retro-commissioning condition assessment that seeks to detect any facility issues that pose potential safety or quality of care issues in advance of The Joint Commission accreditation. In these cases, an experienced commissioning agent takes a high-level view of the design, installation and controls for all of a facility's mechanical systems, including how these systems interact with one another.

In addition to air pressure differentials, the assessment will likely consider chilled water, heating hot water, medgas, pneumatic tube systems and domestic water system tie-ins among adjacent hospital spaces. Through a systematic process, the mechanical components, sensors, controls and other system components are reviewed and tested with the goal of catching existing or potential problems. By approaching the process holistically, the relationships between spaces remain at the forefront through the entire process.

Condition assessment reports then provide insights on equipment upgrades, replacement or rehabilitation options and costs. Ad hoc adjustments made in the field during retro-commissioning can result in immediate and long-lasting improvements to a facility's performance.

Whether conducted immediately after surveying by The Joint Commission, or prior to the window opening for the next one, retro-commissioning can address identified issues and safety concerns.



## THE RETRO-COMMISSIONING PROCESS

A retro-commissioning condition assessment can be broken into four primary phases:

### PHASE 1: PLANNING

During this phase, the retro-commissioning agent meets with facility management leaders to discuss their needs, interests and potential areas of concern. This information is used to define the retro-commissioning project scope and set goals and objectives. Roles and responsibilities are identified as the team sets expectations.

An experienced retro-commissioning agent knows how vital a thoughtful and deliberate approach to retro-commissioning can be at a hospital. “Off hours” are nonexistent, and every system in a hospital can be considered critical to life safety. Coordination with facilities and patient care staff is essential.

The planning process also includes development of a retro-commissioning plan that details the scope and depth of the investigation, its schedule and desired project outcomes. When this phase is completed, the plan and timeline are approved and investigative work is ready to begin.

### PHASE 2: INVESTIGATION

Acting as the healthcare organization’s advocate, the retro-commissioning investigators continue their work by collecting plans, maintenance logs, equipment specifications and other documentation on the equipment or systems to be investigated. Investigators may review trend data from automation systems to assess equipment and system performance as well. This phase may also include interviews with maintenance staff and building operators for additional facility data and insight.

Mechanical systems and equipment are then tested to determine if they are meeting operating standards and delivering the required capacity. These tests measure actual performance against the original design. Drawing on a deep understanding of engineering and construction, investigators use this information to troubleshoot problems, assess a building’s operational safety and efficiency, and create benchmarks for future comparison.

Depending on its scope, the investigation may also include collecting data on energy use that can inform how the building consumes energy so investigators can search for energy-saving opportunities as well.

### PHASE 3: ASSESSING EQUIPMENT/SYSTEM HEALTH

It is not uncommon for budget-conscious hospitals to take a “Band-Aid” approach to repairs over time. Through these investigations, commissioning agents seek to identify the root cause of system problems and propose solutions that save money over time. For example, an HVAC system review may find that recalibration and sensor upgrades may address the root cause of poor performance and effectively extend the system’s life for 10 years at a much lower cost than system replacement.

At the conclusion of the investigation, the retro-commissioning team prepares recommendations for maintenance, repair and replacement projects as well as any energy conservation measures that were found during the retro-commissioning effort. In addition to supporting the accreditation process, the investigative team may also make money- and energy-saving recommendations that are unrelated to the accreditation. The retro-commissioning report of findings often includes potential energy savings, detailed system performance issues, items of deferred maintenance and payback estimates.

### PHASE 4: IMPLEMENTATION

Healthcare organization facility leadership then prioritizes the implementation of the recommendations. The roles during the implementation phase hinge on the healthcare organization’s in-house capabilities, staff commitments and budget. If the accreditation process is imminent or the project is complex, the hospital may retain the retro-commissioning team or other contractors to implement the recommendations.

As the owner’s advocate, the retro-commissioning team returns to verify that repairs and upgrades are complete, and that systems and solutions are performing as intended. Additional energy analysis may

also be performed to determine if the improvements have met energy reduction, sustainability and other performance goals.

## ADDITIONAL BENEFITS

The retro-commissioning process considers conditions as they are on the ground, compared to their intent in the original design, highlighting the differences. Many of the recommendations for improvement can be implemented at little or no cost.

In many cases, in fact, the energy savings, carbon footprint reduction and other cost-saving suggestions not only support accreditation and improve health and safety, but also more than pay for themselves before the next review by The Joint Commission.

Retro-commissioning prepares a healthcare organization for the accreditation process and helps create a safe environment for patients, visitors and staff, while also saving a healthcare organization time and money in the long run.

## BIOGRAPHIES

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