

SUBJECT: Selection Process for Test and Balance, Building Automation Systems, and Commissioning	Effective Date: 10/14/19	Procedure Number: FS 2019 FS0037	
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	Responsible Authority: Associate Vice President for Administration and Finance (Facilities & Safety)		

APPLICABILITY/ACCOUNTABILITY:

This procedure applies to all UCF entities authorizing vendors, contractors, and sub-contractors to perform work on university-owned or -operated facilities; or on university-affiliated Direct Support Organization facilities and leased spaces; for both new building construction and minor projects on existing buildings.

Per UCF Policy 3-111.2 Energy and Water Efficiency, UES serves as the university’s principal advisor and approval authority for ensuring that all construction Commissioning (Cx) activities adhere to Florida Building Code and to the UCF Design, Construction, and Renovation Standards. UES is the ultimate commissioning authority regarding any conflicts or discrepancies relating to the commissioning process, and may be contacted directly to identify any concerns regarding utilities; commissioning; testing, adjusting, and balancing; or building automation systems.

Within the UCF Facilities & Safety (F&S) domain, Continuing Service Contracts (CSC) for Building Automation Systems (BAS) and Testing, Adjusting, and Balancing (TAB/T&B) shall be managed by UES, from which the Request for Proposal (RFP) solicitation originated and vendor selection justification responsibility resides.

BACKGROUND:

Operations and maintenance expenditures associated with energy equipment and energy consumed in university buildings represent a significant operating cost over the life a building. As such, significant efforts, such as building commissioning, are required to maintain energy-efficient state-owned buildings and realize life cycle energy savings.

PROCEDURE STATEMENT:

Per Florida Building Code Section C408, System Commissioning, the commissioning of building mechanical, electrical, and lighting systems is mandatory and applies to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenance attached to such buildings. All new construction building and modification projects, and existing

buildings that affect HVAC, domestic hot water, electrical service, or energy use shall be commissioned to ensure compliance with adopted building codes and university standards.

This procedure identifies the requirements for Cx, TAB / T&B, LEED Administration, and BAS, using CSCs. If the scope of services exceeds \$1M, the affected SOW shall be coordinated with Facilities Planning and Construction (FPC) for separate solicitations for the affected services. Per Florida State Statute 287-055, Cx is considered a professional service, and thus the Consultant's Competitive Negotiation Act (CCNA) applies, as Professional Services shall not be competitively bid.

No minor or major project design may begin until an Owner's Project Requirements (OPR) document is developed and issued by UES, or the UES-procured CSC, and appropriate fees are received.

DEFINITIONS:

Building Codes: A series of ordinances enacted by the state or local government establishing minimum requirements that must be met in the construction and maintenance of buildings.

Building Automation System (BAS): The Direct Digital Controls (DDC) system and associated factory-authorized CSC responsible for installation, programming, front-end server graphics, and ancillary control components to provide complete turnkey, factory warranted native BACnet[®] communication controls for the HVAC and other systems, as designed and specified for automatic operation, and fully integrated into the respective campus-wide enterprise-level BAS server(s).

Commissioning (Cx): A quality-focused process for enhancing the delivery of a project. The process focuses on verifying and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the OPR, per the latest version of ANSI/ASHRAE/IES Standard 202.

Commissioning Agent / Authority / Provider (CxA): An entity, identified by UES, which leads, plans, schedules, and coordinates the Commissioning team to implement and deliver the Cx process.

Energy Services Proposal Form: A proposal form that UES Energy Services provides to FPC for each major and minor project. This form lists the fees associated with Cx, TAB, BAS, LEED Administration, and UES oversight of the SOW for trades associated with the project. Proposals from possible CSCs shall be attached to this form and provided to the FPC Project Manager (PM) for project budget allocation and distribution.

Owner's Project Requirements (OPR): A document that details project requirements and expectations, including: project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, training requirements, documentation requirements, and supporting information. The OPR is generated by UES or a UES-procured CSC, based on the Project

Charter and other project planning and development details. The OPR is a living document that is updated throughout design and construction to incorporate conditions as they change.

Testing, Adjusting, and Balance (TAB / T&B): Air and hydronic measurements performed on HVAC systems to adjust the flows as required to achieve optimum performance of the building environmental equipment. Balancing is usually based upon the design flow values required by the Mechanical Engineer for the project. The TAB CSC submits a written report which summarizes the testing and balancing, and notes any deficiencies found. UES also uses TAB CSCs to assist in identifying preexisting or common issues with a facility.

Scope of Work: Contractually agreed-upon services detailed in the proposal generated by the contractor or consultant, based on OPR, BOD, Design Documents, Submittals, As-Builts, or other documentation provided by the Owner to describe the level of effort required for successful completion of the project as intended.

COORDINATION PROCEDURES:

1. Pre-Design Cx Phase Proposal Process:

- The FPC PM shall meet with the project requestor to understand the project requirements for charter development. The PM shall use e-Builder to coordinate with UES and determine if there is any scope overlap or gaps, or energy conservation efforts or requirements that should be incorporated into the Project Charter.
- UES shall determine the Cx Scope of Work (SOW).
 - As an “Approved Agency” per the UCF Building Code Official (BCO), UES may elect to carry out the responsibilities of the CxA, or seek a third-party Cx.
 - UES shall submit an Energy Services Proposal Form to the PM with estimates for BAS, TAB, LEED Administration, and UES administration fees.
 - UES shall identify the BAS CSCs to assist with design development and design reviews.
 - UES shall coordinate with the PM to determine what degree of LEED Administration will be performed by UES or a third-party LEED Administration service.

2. Design Phase Proposal Process:

- The BAS and TAB CSCs shall provide UES with a SOW draft proposal for each design phase deliverable. Final proposals, based on 100% Construction Documents (CD), shall be included in the bid documents to convey to bidding prime contractors and subcontractors the SOW that will be accomplished via owner direct contracts using the UES-determined CSC.
- All construction work requiring a permit shall be subject to review and inspection by the BCO or designee, including low-voltage BAS SOW.

3. Bid Phase – Energy Services Proposal Form:

- At the time of 100% CD, UES shall provide an updated Energy Services Proposal Form to the PM, detailing the line-item costs for Cx, TAB, BAS, LEED Administration, and UES oversight. All CSC proposals shall be included with this

form to ensure that FPC allocates the appropriate project budget for the UES-provided or -managed SOW.

4. UES Subcontractor and Sub-consultant Payment:

- o Upon receipt of invoice from the CSC(s), UES shall coordinate with the PM to approve all invoices, including schedules of values, percent work complete, and authorization of payment.
- o All respective invoice payments must be authorized by UES before being authorized for payment by the PM.


5. Certificate of Occupancy/Completion Requirements:

Prior to occupancy of a new building, UES shall verify that the final Cx Report is complete and authorize, as one of the sign-off agencies, that the BCO may issue a Certificate of Occupancy (CO) upon receipt of a letter from the Engineer of Record, attesting that the Cx has been completed.

- o The CO shall state that the building is complete, constructed in accordance with the plans and specifications, and meets the minimum code requirements in place at the time of the building permit.
- o The contractor of record shall apply for CO after completion of a new building, building addition, or renovation if there is a change in occupancy.
- o The contractor of record shall request a Certificate of Completion (CC) if occupancy has not changed.

RELATED INFORMATION:

- o ANSI/ASHRAE/IES Standard 202 Commissioning Process for Buildings and Systems
- o Florida Building Code Section C408 System Commissioning
- o Florida Statute 255.252 Findings and intent
- o Florida Statute 255.2575 Energy-efficient and sustainable buildings
- o UCF Continuing Service Contracts for BAS, TAB, and Cx: <http://fp.ucf.edu/wp-content/uploads/vendors/ContinuingServicesFirms.pdf>

Approved By:	Date Approved:
	<p>10/14/19</p>
<p>Duane Siemen Interim Associate Vice President Administration and Finance Facilities and Safety</p>	

Revision Log

Version	Description of Changes	Date
0	Original approved procedure	10/14/19