

Building Performance Commissioning Services

Three Scopes of Services Offered

The following are examples of three commissioning scopes of services which can be selected (performed) separately or together, depending upon the needs of the Owner and/or Developer. **Results are optimized when all three services are combined.**

SCOPE NO. 1:

Development of Design Criteria and Acceptance Testing of New Systems and Equipment

Focus:

Systems performance, operating costs, occupant comfort.

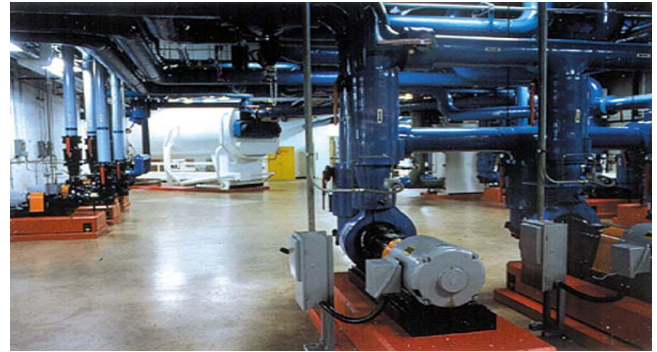
Purpose:

To ensure that an accurate specification and understanding of the Owner's operational and building performance requirements are conveyed to the design team, and that an independent and objective acceptance evaluation of the installed systems is performed during start-up operations to verify that operational requirements have been met. During this phase of the work, the commissioning engineer will verify that:

- The Owner's Performance Criteria are accurately conveyed to the design team.
- The System's Design Concepts are appropriate to meet the Owner's expectations.
- The construction specifications for acceptance testing are clear and accurate.
- Project completion is well defined and validated.
- Acceptance testing will verify that the building's performance criteria has been met.

Scope of Work:

- Conduct meetings with the Owner and the A/E to identify appropriate operational performance criteria of new building systems (i.e. code minimums, engineering standards or state of the art) and ensure these are developed, understood and documented.
- Develop acceptance (performance-based) testing criteria to be included in A/E's final bid documents to reflect the Owner's operational requirements.



- Review the Engineering design concepts to ensure they are likely to meet the Owner's expectations for building performance.
- Review submittals of key systems/equipment for compliance with performance requirements following review/approval by engineer of record.
- Conduct periodic site visits to observe the quality of installation and level of completion.
- Observe and validate performance testing of new systems and equipment by responsible parties.
- Provide commissioning report to the Owner on acceptability of performance testing, Owner training, delivery of record documents, commencement of warranty periods, and recommendations for Owner's acceptance of completed contracts, and discharge of final payments in conjunction with the engineer of record.

Value Proposition:

This scope of work is designed specifically to bring the following additional values to the construction program:

- Independent inspection and validation of the construction quality.
- Independent verification of the performance of the new building system and equipment.
- Objective analysis of the completed project and recommendations of when to issue Owner's acceptance of the project.
- Minimize problems and delays at systems' start-up.
- Provide a smoother transition from construction to operations.
- Provide confidence in performance and reliability of the completed project.

A not-to-exceed allowance amount will be determined for Scope of Services No. 1, based on the specific information provided for each facility(ies).

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Three Scopes of Services (continued)

SCOPE NO. 2:

Design Due Diligence Review/ Recommendations

Focus:

Minimizing design errors, omissions and resulting cost overruns.

Purpose:

To provide an independent and objective review of the project design, minimize errors and omissions, and minimize conflicts that would have a negative impact on project costs, schedule and Owner's satisfaction with the completed project.

Scope of Work:

- Provide a due diligence design review at 20%, 50%, and 95% completion of design documents, to identify errors, omissions and conflicts; operational cost impacts; and life cycle cost impacts.
- Review key submittals of major/critical equipment coincident with review and approval by the engineer of record.
- With each due diligence design review, provide a briefing with the designers to discuss issues, concerns and suggested solutions.

Value Proposition:

This scope of work is designed to minimize the potential for change orders, cost overruns and project delays by providing independent review of the design documents prior to being released for competitive bidding. In addition, the design review will also make note and recommendations on design features that could negatively impact operating costs and life cycle costs of the new facilities.

A not-to-exceed allowance amount will be determined for Scope of Services No. 2, based on the specific information provided for each facility(ies).

SCOPE NO. 3:

Plant Operations and Maintenance Strategic Plan

Focus:

To quickly transition from construction to smooth and efficient operations.

Purpose:

The purpose of this scope of work is to specify and verify the new systems and equipment documentation and training requirements in order to ensure a smooth initial start-up as well as long-term cost-effective operation of the new systems.

Scope of Work:

- Develop the requirements for the operations/maintenance/warranty documentation package to be provided by the contractor for inclusion into the A/E's (designer's) bid package.
- Develop requirements for the operator training package for inclusion into the A/E's (designer's) bid package.
- Inspect, verify and document the completion, full implementation and effectiveness of the operational transfer to the building engineer.

Value Proposition

This scope of work is designed to minimize/resolve problems often experienced at project start-up and throughout the first year of operation, caused by inadequate documentation and training on the operations and maintenance of the new systems. By setting specific standards and expectations for both documentation and training during the bidding phase of the project, we can inspect and verify that these requirements have been met, and that the systems can be cost-effectively operated and maintained by the in-house staff from the first day of project acceptance. This will result in fewer problems at start-up, fewer service calls, lower operating costs, and longer equipment life.

A not-to-exceed allowance amount will be determined for Scope of Services No. 3, based on the specific information provided for each facility(ies).