



NEUDORFER ENGINEERS, INC.
Consulting Engineers
5516 1st Avenue S. - Seattle, Washington 98108
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Last updated 3/7/2005

BUILDING COMMISSIONING PHILOSOPHY

General Approach to Commissioning Systems

Neudorfer Engineers, Inc., (NEI) was established in 1970 to provide the final steps necessary to ensure that successful HVAC operation results from skillful design and installation. Commissioning is the formal and comprehensive process for work our company has been doing for over 30 years.

TOTAL BUILDING SYSTEM APPROACH

NEI is able to provide an Owner a complete building-commissioning project that is economical for all types and sizes of buildings, and the varied types of building systems that are in each one. NEI's commissioning team includes professional engineers and technicians with extensive experience in operations and maintenance, and building automation systems. This hands-on experience in constructing and maintaining building systems gives NEI an Owner's perspective that we incorporate into our commissioning approach. We apply this perspective to all commissioning activities, including site visits, functional performance testing observations, and Owner training. We focus on ways in which a building's Owner can sustain the benefits of our efforts. These include:

- ✍ Getting the project started
- ✍ Plan development
- ✍ Review of equipment submittals
- ✍ Equipment start-up
- ✍ Review of the control submittals
- ✍ Testing & balancing verification
- ✍ Control commissioning
- ✍ Operation and maintenance manual review
- ✍ Owner training

NEI also offers extended commissioning services in support of the operations and maintenance team responsible for the facility after "move-in." These services complement the basic commissioning effort and enhance the ability of the building maintenance team to provide a workplace environment that focuses on high indoor environmental quality. These services provide assistance in the development of a facility management strategy that includes preventative/predictive maintenance programs, systems manuals and continued training and assistance during the warranty period.

NEI is certified by the National Environmental Balancing Bureau (NEBB) and is a member of the Building Commissioning Association. NEI can provide commissioning services either as an independent commissioning authority or through a combined TAB/commissioning team project approach. We are also working with selected clients to develop an in-house commissioning capability. This can provide significant paybacks, especially when building systems require re-commissioning.



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Our commissioning management services package has contributed successfully to a large number of projects. Our services can and will be tailored individually to each client's requirements.

COMMISSIONING

Neudorfer Engineers, Inc., is able to provide a complete, economical commissioning for all types and sizes of building services systems. Our emphasis on positive management of commissioning ensures that we can provide an effective commissioning service with the agreed program and cost. We can also provide building services validation and environmental services to meet client requirements. The instrument manufacturers regularly test for accuracy the instrumentation used for all of these services and all instruments carry calibration certificates, where relevant.

Commissioning Management:

- ~~///~~ The following management activities are available:
- ~~///~~ Design review of specifications and drawings to ensure that commissioning is required
- ~~///~~ Development of the commissioning logic and integrated test programs;
- ~~///~~ Preparation of project-specific method statements and risk assessments;
- ~~///~~ Preparation of project-specific test sheet packages
- ~~///~~ Witnessing and reporting of off-site works tests
- ~~///~~ Witnessing of contractors' site test results and issuing of reports with recommendations
- ~~///~~ Management of testing life safety systems with local authorities
- ~~///~~ Preparation and management of client training programs

Commissioning Benefits:

- ~~///~~ Support a team approach, facilitate construction coordination, reduce change orders
- ~~///~~ Optimize equipment performance, improve the quality of systems, and minimize energy use
- ~~///~~ Train maintenance staff, and enhance operation and maintenance capabilities
- ~~///~~ Reduce the life-cycle cost of building ownership, and sustain property value

We feel success depends on the following:

- ~~///~~ Developing a clear understanding of what needs to be done
- ~~///~~ Providing attention to detail
- ~~///~~ Producing documentation for systems and equipment that is useful during construction and after occupancy
- ~~///~~ Maintaining a cooperative team approach to construction, problem solving and conflict resolution
- ~~///~~ Keeping channels of communication open among all participants