SECTION 01 75 00
STARTING and ADJUSTING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Starting systems
B. Demonstration and instructions
C. Testing, adjusting, and balancing

1.2 STARTING SYSTEMS
A. Ensure that necessary controls and safeguards are function prior to starting any equipment.
B. Coordinate schedule for start-up of various equipment and systems.
C. Notify Architect, Commissioning Authority, and Owner at least two days prior to startup of each item.
D. Verify each piece of equipment or system for proper lubrication, drive rotation, belt tension, control sequence, or other conditions that may cause damage.
E. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
F. Verify wiring and support components for equipment are complete and tested.
G. Execute startup under supervision of responsible Contractors' personnel in accordance with manufacturers' instructions.
H. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to startup, and to supervise placing equipment or system in operation.
I. Submit a written report, per section 01 40 00, verifying the proper installation of the equipment or system and that it functions correctly.

1.3 DEMONSTRATION AND INSTRUCTIONS
A. See Section 01 91 00 – "Commissioning" for requirements for demonstration and training.
B. Demonstrate operation and maintenance of Products to Owner's personnel within two weeks after the date of Substantial Completion.
C. Demonstrate Project equipment instructed by a qualified manufacturers' representative knowledgeable about the Project.
D. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
F. Demonstrate start up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed upon times, at equipment location.
G. Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instruction.
H. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

1.4 TESTING, ADJUSTING, AND BALANCING
A. Owner will appoint, employ, and pay for services of an independent firm to perform testing, adjusting and balancing.
B. The independent firm shall perform the services specified in section 23 09 00.
C. The independent firm shall submit reports to the Architect and Commissioning Authority indicating observations, results of tests and compliance or non-compliance with specified requirements and with the requirements of the contract documents.

D. The independent firm shall coordinate scheduling of Testing, Adjusting, and Balancing activities with the Construction Manager.
   1. Testing, Adjusting and Balancing must be completed prior to scheduling equipment and system Functional Performance Testing.
   2. See Section 01 91 00 – "Commissioning" for details on commissioning activities.

PART 2 PRODUCTS
2.1 Not Used.

PART 3 EXECUTION
3.1 Contractor shall coordinate equipment and system start-up with the Commissioning Authority.
   A. This is to include in-progress inspections required by the Commissioning Consultant.