



SECTION 4 - SPECIFICATION FOR TESTING AND COMMISSIONING (T&C)

General

The sub-contractor shall supply all necessary testing, calibrating instruments and labour required for the setting and commissioning of the system by him. The sub-contractor shall also allow for any necessary replacement of parts in order to achieve the conditions specified in the drawings and specification.

The Superintending Officer shall be informed when such testing will be carried out. During the testing period each trade shall have his supervising foremen and mechanics available to aid in testing and to perform any adjustment as directed. The testing and commissioning work shall be carried out under the direction of experienced personnel.

All readings taken during the testing shall be tabulated in appropriate forms. This form shall cover every expecting of the systems and must be submitted to the Superintending Officer for approval.

a) The Systems

The starting – up of the above-mentioned systems shall be under the supervision of the manufacturers engineer or its duly-appointed representative. The capacity of each unit shall be checked against design conditions or where necessary under stimulated design conditions. Performance rating test shall comply with relevant standards. All operating and safety controls shall be testing and set.

b) Piping System

After each section of the related piping systems has been installed it shall be blown clear by suitable means, pressure tested to 200psi and any leaks repaired.

After the complete piping system have been installed, the whole system shall be subjected to a hydrostatic pressure test, in the presence of the Superintending Officer, to withstand not less than 200psi for 2 hours or 1 1/2 times the working pressure for 24 hours.

c) Control System

All controllers and actuators shall be tested and adjusted for the modulating range to ensure correct operation of all control systems.

Control sequences shall also verify.

All safety controls shall be tested and if necessary under simulated conditions.

d) Electrical

All thermal overloads on starters shall be checked and adjusted for the actual load and the settings recorded.

All circuit breaker overload settings shall be checked and recorded. Each motor shall have its voltage and current drawn recorded.

e) Reliability Test & Test Record

When the preparatory tests have been completed successfully and the Sub-contractor has notified the Superintending Officer that the Installation is ready to work, each section of the installation will be required to operate either continuously or intermittently as may be required without failure of any kind before the 'Handing Over Certificate' will be issued.

Should any failure occur due to, or arising from faulty fittings, materials, or workmanship but otherwise sufficient to prevent the commercial use of the installation, a reliability test period of one calendar month shall be recommended after the Sub-contractor has remedied cause of failure to the satisfaction of the Superintending Officer.

On completion of testing and commissioning of the installation, the Sub-contractor shall submit 2 copies of all test records to the Superintending Officer for verification.

f) Warranty

The Contractor shall warrants that all plant, materials and equipment supplied and all workmanship performed by him to be free from defects of whatsoever nature. All equipment installed which had been warranted by the suppliers or manufacturers must be accompanied by the letter or certificates of warranty and shall be deposited to the S.O. for records.