The 9 Key Elements of Successful Plant Commissioning

**Element 4 - PRE-COMMISSIONING -**

- Pre-commissioning activities are completed and the systems are ready to commence commissioning.

- Final inspection of "critical" equipment installation

- For major items of rotating machinery, major utility systems and special electrical and instrument control equipment

- Mechanical test run of pumps

- Chemical cleaning

- Steam blowing

- Water flushing

- Tightness tests

- Luft tightness "Leak" testing of systems

- Final reinstatement of systems or sub-systems

- Final inspection and closing of vessels and tanks

- Final inspection of "critical" equipment installation

- Painting non-ferrous surfaces

- Electrostatic painting

- Lubricants application

- Lubrication of machinery

- Lubrication of bearings

- Air tightness "Leak" testing of systems

- Mechanical interlock checks

- Pump alignment checks

- Final completion test records

- Final commissioning tests

- Pre-commissioning "Run-in" of major rotating equipment and electrical motors

- Pre-commissioning activities can be done after or as well before mechanical completion (MC).

- Systems punchlist (commissioning punch)

- Punchlist report of outstanding punch points

- Pre-commissioning activity test records are prepared to record the satisfactory completion of various system preparation tasks & activities.

- Systems punchlist (commissioning punch)

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- Performance Indicators

- Pre-commissioning Additional Records

- Pre-commissioning Test Records

- Pre-commissioning Checklists

- Pre-commissioning Procedures (Examples)

- Pre-commissioning Sequence (Example)

- Process systems in order of "priority"

- Plant systems

- Building power, HVAC, fire & gas protection

- DCS and PLC systems and instrumentation

- Raw water and fire fighting systems

- Waste water treatment systems

- Service water / potable water / cooling water systems

- Instrument air / plant air and regeneration air systems

- Water treatment systems, demineralization units and boiler water system

- Nitrogen system

- Flare system

- Plant safety equipment and fire & gas detection

- Fuel gas and fuel oil system

- Stop systems

- Boiler systems with steam & condensate networks

- Amine, aromatics and caustic drain systems

- Feed & product storage systems

- Product & feed systems

- Sour water treatment section and chemical handling treatment section

- Amine treatment section

- All process systems in order of "priority"

- Pre-Commissioning Checklists

- Spectacle blind installation checks

- Non-return valve internals installation checks

- Thermal refractory lining installation checks

- Mechanical interlock checks

- Fitting of all locks on valves

- Packing of a distillation or scrubbing column

- Packing a reactor with catalyst

- Installation of filter medium and cartridges

- Air blowing

- Steam blowing

- Water flushing

- Chemical cleaning

- Tightness test

- Cooling water passivation

- Mechanical test run of pumps

- Packaging of a distillation or scrubbing column

- Installation of filters

- Final reinstatement of systems or sub-systems

- Final inspection and closing of vessels and tanks

- Final inspection of "critical" equipment installation

- For major items of rotating machinery, major utility systems and special electrical and instrument control equipment

- Request for mechanical completion acceptance

- Punchlist report of outstanding punch points

- Pre-commissioning activity test records are prepared to record the satisfactory completion of various system preparation tasks & activities.

- Many different checklists for different types of equipment

- To record the inspection and status of equipment items within the plant

- To conform readiness for commissioning

- Often to be witnessed by client, PMC & licensor

- Pre-commissioning Test Records

- Pre-commissioning Checklists

- Pre-commissioning Procedures (Examples)

- Pre-commissioning Sequence (Example)

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