ACCEPTANCE CERTIFICATE (AC)

Formal documentation signed off by the consultant or owner, confirming that equipment meets specification requirements and can be handed over to the owner.

AIR SYSTEM

Mechanical piping to distribute pressurized air throughout the plant.

ASSET INFORMATION SYSTEM

The hardware and software comprising systems, network, architecture, infrastructure, interface used to manage asset data and information. A single organization has several asset information systems that may or may not be interfaced with each other. One example is the Computerized Maintenance Management System (CMMS) that is used for maintenance work management and accruing costs to assets.

ASSET MANAGEMENT

The set of coordinated activities of an organization to realize value from its assets. It is a multi-disciplinary approach that involves the balancing of costs, opportunities and risks against the desired performance of assets, to achieve the organizational objectives. This balancing is continuous, happening over the entire life cycle of the asset from planning and acquisition to retirement. Asset management relies on the careful management of asset information to make cost-effective, long term decisions such as repair or replace, identify and treat risks, prioritize investments, determine maintenance strategy and to create the demand for new assets.

Commissioning Dictionary

ASSET MANAGEMENT SYSTEM

The set of interacting elements deliberately created by an organization to establish its asset management policy, objectives and the related processes to achieve these objectives in support of overall organizational goals.

AUTOMATION

Logic controlled systems programmed to automatically control in-service equipment, such as automatic switch-over of redundant systems or remote operation of plant equipment.

BALANCE OF PLANT

Auxiliary electrical/mechanical systems that support the main plant process, such as lighting systems, heating/cooling systems, fire detection/suppression systems, security systems, PA systems, etc.

BOUNDARY ISOLATIONS

Clear demarcation points between energized and non-energized systems. Boundary isolations are often defined when commissioning is starting while construction activities continue, in order to clearly define where it is safe to work. The Lock-Out-Tag-Out (LOTO) processes are used to define these boundary isolations.

BROWNFIELD PROJECT

A project being executed within an already operating facility.

CARRY OVER WORKS (COW)

Situations where the commissioning team is demobilizing from site while there are still minor activities to complete. Also known as Type-C deficiencies, the list of major/minor activities that remain are usually not show stoppers, and are often discussed between the commissioning team and operations team to determine how best to complete the remaining items, by either a small team from the project remaining at site, or an agreement with the operations team to pay for completion post-project.

CERTIFICATE

Used to formally define an achieved objective within a project, such as certificate of conformance, certificate of handover, etc.

CHEMICAL DELIVERY SYSTEM

The chemical storage, piping, pump, and dosing equipment used to deliver process chemicals within the plant.

CLASSROOM TRAINING

Training provided to the owner and operating staff in a classroom environment, often followed by field training.

CLEANING (BLOWING, STEAM BLOWING, CHEMICAL CLEANING)

The process of cleaning mechanical piping prior to connection to pumps of other instrumentation, to ensure there is no construction debris in piping and no obstructions that would interfere with process flows. Cleaning can consist of blowing air through piping, using steam to pressure clean piping, and applying chemicals to degrease the inside of piping. The cleaning process is part of the pre-commissioning phase of the project.

Commissioning Dictionary

CLOSEOUT PHASE

Following successful commissioning and startup, closeout is the last phase to complete all the final contract deliverables such as documentation and drawings, final performance guarantees, etc.

COLD COMMISSIONING

Commissioning that is done in an un-energized state.

COMMISSIONING

Refers to the phase of testing following pre-commissioning and before startup of the plant processes. But also is used to refer to the entire testing and verification process between construction completion and handover to the owner.

COMMISSIONING AND STARTUP (CSU)

Refers to the entire testing and verification process between construction completion and handover to the owner.

COMMISSIONING COMPLETION ASSURANCE (CCA)

Formal certificate used to signify successful completion of commissioning.

COMMISSIONING CONTROL POINT (CCP)

A point in the commissioning plan or procedure where the contractor is required to request witness of a particular aspect of commissioning by the owner or consultant SME. Also referred to as a Hold Point or Witness Inspection Point.

Commissioning Dictionary

COMMISSIONING PLAN

A document defining how commissioning will be executed. This gives the higher-level plan answering "how" commissioning will be done such as the resources required, any special tools required, or the sequence of activities. The plan is different from the procedure, but the two documents can often be combined. A commissioning plan can also be called a test plan.

COMMISSIONING PROCEDURE (CP)

A document defining the detailed steps to be taken to execute a test. This gives the specific steps such as change a setpoint, confirm an alarm limit, or record a specific value. The procedure is different from the plan, but the two documents can often be combined. A commissioning procedure can also be called a test procedure.

COMMISSIONING REPORT

Once tests are completed, the results are gathered and summarized in a report. The commissioning report may be as simple as a list of gathered values, but often includes some analysis by the contractor or consultant showing that the results that were gathered meet the specification requirements.

COMMISSIONING SEQUENCE

The order the commissioning activities must take place in order to build sub-systems into a functioning system or plant process. For example, auxiliary power systems must be commissioned before they are required to power electrical cubicles for further commissioning.

COMMISSIONING SPECIFICATIONS AND OBJECTIVES (CSO)

A document defining the technical requirements for commissioning as well as the objectives to meet at the end of the commissioning process. The CSO is often defined as part of the project design by the engineering team design the overall system or plant process.

COMMISSIONING TEAM

The group of individuals with specialized knowledge of design, startup, and operation of the system or plant process. The commissioning team can be made up of internal and external experts, direct reports or seconded resources, or temporary experts temporarily joining the team for testing of a specific system. The commissioning team is often not a direct reporting structure, but a matrix organization of subject matter experts.

COMMUNICATION

The most critical aspect of commissioning - accurate and timely information must be available in order to make real-time decisions during dynamic on-site testing. Strong processes must be established in advance of commissioning in order that the commissioning team is able to communicate efficiently and effectively.

COMMUNICATIONS INFRASTRUCTURE TEST (CIT)

Specific testing to confirm that electrical systems responsible for transmission of data within the system or plant process meet specifications.

CONSTRUCTION PHASE

The phase prior to pre-commissioning where buildings are erected, equipment

installed, cables are pulled, and piping is connected per the issued for construction drawings.

CONSTRUCTION TIE-INS

Interfaces in the design where new mechanical or electrical systems are connected to existing infrastructure and facilities.

CONSULTANT

The group providing expert guidance or analysis to the project. The consultant is often the Engineer of Record, or the group responsible for preparing the project specifications and design packages.

CONTINGENCY

Any additional schedule or budget set aside at the time that estimates are prepared, to account for unknowns that are encountered during project execution. Can also refer to alternate plans/sequences to be executed should identified risks materialize into issues.

CONTRACTOR

The group responsible to install equipment per issued for construction drawings. Depending on the type of contract model, can also be the group that completes the design per issued specifications if an Engineer Procure Construct (EPC) contract model.

CONTROL ROOM

The central area designated as the main control point of the system or plant process, where all remote equipment is interfaced to and can be controlled from a single location.

CRITICAL SPARES

The list of spare parts to purchase in advance and keep inventory on-site. These spares are determined to be critical and must be kept on-hand should an in-service piece of equipment fail and need to be replaced promptly.

CYBER SECURITY (NERC)

The process to ensure networked systems are protected from external interference by hackers or unauthorized external access/malware. NERC refers to the North America Electric Reliability Corporation that sets standards for power system operation, monitoring, and compliance of electrically interfaces assets.

DAILY COORDINATION MEETING

A morning meeting is often arranged with all commissioning stakeholders to coordinate the days activities, identify any changing safety hazards, and ensure everyone is aware of the required commissioning tasks to be completed that day.

DECOUPLED RUN

Initial run of rotating equipment while unconnected from load. This decoupled or uncoupled run is to verify motor operation prior to testing the performance curve of the motor under load.

DEFICIENCY

An issue identified with the system or plant process that does not meet specification requirements and must be rectified by the contractor. Deficiencies are classified as Type-A, Type-B, Type-C. A Type-A deficiency must be addressed prior to the next activities taking place (i.e. deficiency must be addressed prior to energization of equipment). A Type-B deficiency does not impact further testing, but must be addressed prior to handover to the owner. A Type-C deficiency is minor in nature, and is agreed to be rectified after handover to the owner during the warranty phase.

DEMONSTRATION TESTING

The stage of commissioning where the system or plant process is shown to function per specification.

DESIGN PHASE

The phase at the beginning of the project where the project specifications are used to create and complete the design drawing packages for civil, mechanical, and electrical systems. The design phase includes engineering studies, protection coordination studies, and several other design processes in order to detail what is required to be constructed in the field.

DIESEL GENSETS

Electrical generators that run on diesel fuel and act as a backup power supply should an outage occur on the main power supply source.

DISTRIBUTED CONTROL SYSTEM (DCS)

Several remote I/O panels are placed at various locations around the plant to

control aspects of the system or plant process, and are interfaced to a central control room for monitoring systems and controlling plant processes.

DOCUMENT CONTROL

The process or group responsible for the exchange and archive of project documents. Often a software system is used to facilitate document control on a large project.

DOCUMENT MANAGEMENT SYSTEM (DMS)

The software system used to facilitate the exchange and archive of project documentation amongst all project stakeholders.

DRY COMMISSIONING

Testing installed equipment in the absence of process control fluids.

DUCT BANKS

Civil infrastructure typically made of concrete with removal lids that are used to enclose outdoor cables between buildings and equipment.

ELECTRICAL/MECHANICAL (E/M)

E/M is a common abbreviation for electrical/mechanical systems.

ENERGIZATION NOTICES

Formal alerts or notifications issued by the commissioning team prior to energizing new portions of the system to ensure all site groups are aware of planned energizations and new safety requirements.

ENVIRONMENTAL ASSESSMENT (EA)

A study completed prior to a project to determine the environmental impact that the new facilities will have on the surrounding area, and the mitigation requirements to alleviate any undesired impacts. This study can also take place during a project should an incident occur that has detrimental impacts on the natural environment.

EQUIPMENT TAG

The labeling of equipment that is required prior to commissioning and startup, to ensure that there is no confusion on what equipment is being operated and tested. This is particularly important for repetitive equipment, such as a lineup of blowers or several hydraulic units in the same facility. Equipment tags are critical to preparing operating procedures and safe work procedures for commissioning and used by the operating staff following the completion of the project.

EXHAUST SYSTEM

The mechanical duct work or piping to route fumes to a desired location, such as piping to exhaust fumes from an indoor diesel generator to atmosphere.

FACILITY PERFORMANCE

The process to adjust settings of the new equipment to optimize performance, and let the equipment run for a period of time to monitor correct operation of the new plant process prior to handover to the owner.

FINAL ACCEPTANCE CERTIFICATE (FAC)

Issuance of formal paperwork following completion of the warranty period,

signifying that the contractor has met all contractual requirements.

FIRST FILL
The chemicals or process fluids required to be applied to the subsystems prior to startup of the new plant processes.

FLOWCHART
A diagram indicating the steps required to be followed to achieve a desired outcome.A flowchart can contain decision points that determine the path to be followed and the outcome each decision will lead to.

FLUSHING
The process of cleaning any process piping during pre-commissioning prior to the start of commissioning, to ensure piping if free of any debris or obstructions.

FUEL SYSTEM
The tank, pump, and filter components making up the fuel handling system, for delivery of fuel to a combustion engine.An example is a diesel fuel system to provide fuel to a diesel genset.

FUNCTIONAL REQUIREMENT SPECIFICATION (FRS)
A document specifying how a subsystem is to operate to achieve a desired function, outcome, or control philosophy.

FUNCTIONAL TESTING
Equipment level testing to verify the correct operation of stand-alone

equipment. This is to verify that there was no shipping damage, and the equipment functions per specification and matches similar testing conducted in the factory.

GAS DETECTION SYSTEM

A life safety system to monitor invisible and odorless gasses in a room or enclosed space, to alert individuals of any leaks or hazardous chemicals that have been released.

GREENFIELD PROJECT

A project undertaken in a previously undeveloped area. Such projects are all new and do not expand or interface to existing in-operation facilities.

HANDOVER (TURNOVER)

The process to ensure all equipment meets specification and all deficiencies are rectified as equipment is made ready to be received by the owner and operating team.

HANDS-ON TRAINING (FIELD TRAINING)

On-site training conducted at the process equipment where the trainer presents aspects of the equipment and the trainees are able to look at and manipulate the installed item.

HAZOP

Operations that can be potentially hazardous or dangerous, and require special access protocols and safe operating procedures to perform.

HEALTH, SAFETY & ENVIRONMENT (HSE)

Implementation of practical aspects of environmental protection and safety at work.

HEATING VENTILATION AIR CONDITIONING (HVAC)

The mechanical equipment and ductwork used for heating and cooling building spaces.

HIGH VOLTAGE DIRECT CURRENT (HVDC)

Transmission of power over long distances using direct current where alternating current is rectified and inverted at each end of the transmission line by dedicated converter stations.

HOT COMMISSIONING

Testing process equipment that is energized.

HOT REDUNDANT

Critical equipment is duplicated and both cubicles energized, where one cubicle is actively controlling the plant processes and the other cubicle remains energized but is in standby, ready to be swapped to control the plant process should the primary cubicle experience a fault.

HUMAN MACHINE INTERFACE (HMI)

The computer screen or control panel that allows the process operator control and monitor plant processes.

Commissioning Dictionary

INFANT MORTALITY

Failures during the initial runtime of equipment. Infant mortality is described as a bathtub curve, where the chance of equipment failure can be high when power is first applied, but decreases as runtime increases. The bathtub curve completes as equipment reaches end-of-life and failure rates start to increase again.

INSTALLATION CHECK LIST (ICL)

A list of parameters to verify by the construction team to confirm equipment is installed per specification.

LICENSE COMPLIANCE

Requirements that must be met in order to meet external regulator specifications. For example, an environmental license may specify actions to mitigate the impact on local wildlife, which must be done by the project team to meet license compliance.

LIFE SAFETY SYSTEMS

The balance of plant systems in place to monitor and alert for safety hazards. For example, fire detection systems alert when heat or smoke are detected and automatically initiate fire suppression systems.

LOAD RUN

Testing of rotating equipment while connected to load to verify the performance curve of the motor.

LOCAL CONTROL PANEL

The screen or controls at the equipment allowing the operator to override the remote control of the HMI in order to control equipment locally during maintenance or troubleshooting activities.

LOCK-OUT-TAG-OUT (LOTO)

The formal process to control energy sources and ensure boundary isolations are maintained. LOTO involves locking equipment in a known state and controlling who has the ability to re-establish power once safe to do so. This is done with locks and lockboxes as well as permitting systems and formal permit signoffs.

MANAGEMENT OF CHANGE (MOC)

A deviation made on site from what is contained in the original issued for construction drawings. The project management team reviews the change and notifies everyone impacted by the change. Drawing changes are managed using the red-line drawing process. Cost and schedule changes are managed though formal project controls processes.

MANUFACTURER

The external group responsible to build equipment per specification, test in the factory before shipping, and provide on-site support during installation and commissioning.

MASTER DOCUMENT REGISTER (MDR)

A list of all the documents used on the project indicating the name, document number, status and revision.

Commissioning Dictionary

Also know as the Master Document List (MDL) or Submittal Log.

MASTER DOCUMENT LIST (MDL)

A list of all the documents used on the project indicating the name, document number, status and revision. Also know as the Master Document Register (MDR) or Submittal Log.

MECHANICAL COMPLETION

The formal handover from the construction group to the commissioning group when equipment is installed and ready for testing.

MEETINGS

Gathering of a group of individuals to discuss a topic and determine actionable outcomes from decisions at the meeting.

MODIFICATION

The rectification of snag items (deficiencies) to meet project specifications or/and requirements.

MOTOR CONTROL CENTER (MCC)

Electrical distribution panel providing power to pumps and motors, often with variable frequency drives for precise control and remote operation of rotating devices.

OCCUPANCY PERMIT

Confirmation by the authority having jurisdiction that all life safety systems are installed and functional and that the building can safely be occupied for its intended purpose.

OCCUPATIONAL SAFETY AND HEALTH PLAN (OSHP)

A document identifying and evaluating hazardous conditions and practices inthe workplace, and developing hazard control measures to mitigate dangerous situations to protect workers. The OSHP will measure and audit the effectiveness of hazard controls for continuous improvement to ensure a safe working environment.

OIL SYSTEM

The oil storage and piping system for distribution of oil to plant processes, as well as containment barriers to mitigate spills and environmental release of oil.

OFFLINE COMMISSIONING (COLD COMMISSIONING)

Testing of equipment when not connected to plant processes or not energized in order to verify parameters at an equipment level, prior to integration with the larger system.

OFF-SITE TESTING

Testing that is done before equipment is delivered to site for installation. Off-site testing is typically performed by the manufacture to confirm equipment meets specification requirements and confirm the integrated operation of hardware and software. Any testing done off-site reduces cost and schedule impacts to the project by identifying and rectifying errors earlier in the project and allowing the manufacturer to fix issues where they are cheaper to rectify in the factory with less schedule delay during commissioning. Off-site testing is also called Factory Acceptance Testing (FAT) or Software Integration Testing (SIFT).

Commissioning Dictionary

ON-CALL PERSONNEL

Individuals that are standby to be notified should there be an issuewith equip,emt on site.

ON-SITE TESTING

Testing that is done once equipment is delivered and installed in its permanent location. On-site testing consists of pre-commissioning and commissioning activities. On-site testing is also called Site Acceptance Testing (SAT) or Site Integration Testing (SIT).

ONLINE COMMISSIONING

Testing that is conducted while the equipment is energized and/or connected to other in-service equipment. Online commissioning is also called Hot Commissioning or Live Commissioning.

OPERATING SCENARIOS

The equipment is configured to function in a specific mode of operation, such as normal operation, fault situations, or redundant switchover situations, to confirm the system will function in all conditions.

OPERATION

Managing and controlling the systems and plant processes to produce the desired outcome.

OPERATION & MAINTENANCE (O&M) MANUALS

Documentation provided by the contractor or equipment vendor defining how to manage and control the equipment as well as the preventative maintenance

tasks required to prolong the life of the equipment.

OPERATIONAL READINESS

Processes to take place during the project to ensure that the operations staff are ready to continue operating and maintaining the new systems or plant processes. Examples are providing training, ensuring documentation is available, and asset management systems are in place for use by the operating team at the time of handover.

OWNER

The group initiating the project, paying for the project, and taking it over following completion of the project for ongoing operations and maintenance.

PERFORMANCE TESTING

Tests at an equipment level to ensure no infant mortality issues and that the equipment will function reliably as part of larger systems tests.

PERFORMANCE VERIFICATION

Following successful completion of commissioning and startup, performance of the new systems or plant processes will be optimized and verified to confirm specification requirements.

PIPING AND INSTRUMENTATION DIAGRAM (P&ID)

A detailed drawing showing interconnection of all piping and mechanical equipment/instrumentation along with control equipment.

Commissioning Dictionary

PLANT

Refers to all the infrastructure and equipment used in operation and maintenance of a given facility.

PRE-COMMISSIONING

Testing that occurs after installation of equipment and precedes the commissioning phase. Examples are flushing of pipes to confirm cleanliness, motor testing that includes initial rotation, current measurement, and flow rates, as well as first energization of equipment racks.

PREREQUISITES

Activities that must be completed prior to the next activities proceeding.

PRESERVATION PLAN

A document defining specific tasks to be completed to ensure a portion of the construction site is maintained through the duration of activities. For example, the existing facility may have heritage structures that must be maintained and form part of the final façade of the new facilities. Or when excavation uncovers heritage artifacts, a preservation plan is often required to ensure the artifacts are safely removed from site for further analysis and preservation.

PRE-STARTUP SAFETY REVIEW (PSSR)

This is carried out once the Request for Startup (RFSU) certificate or notification is received before the commissioning team proceeds with energization. The PSSR is conducted to ensure the systems are safe to energize.

and that all precautions have been taken to ensure everyone on site is kept safe.

PRIME CONTRACTOR

The entity who has a contract with the owner and is responsible for its completion.

PROCESS CONTROL NARRATIVE (PCN)

A document defining how the plant processes are to function. The PCN is used during design to implement the process, and is also what is used during commissioning to confirm systems are functioning as intended.

PROCESS CONTROL SYSTEM (PCS)

Systems used to control the plant process equipment, typically implemented using automation.

PROGRAMMABLE LOGIC CONTROLLER (PLC)

Remote IO used to interface and control plant process equipment. The PLC is programmed as required to implement control of the overall plant process.

PROJECT CHANGE NOTICE (PCN)

A change management document used to formally indicate a cost, schedule, or scope change to the original project definition.

PROJECT COMMISSIONING PLAN (PCP)

A document defining the sequence of testing once installation is complete to handover of the systems or plant processes to the owner.

The PCP defines what activities need to be done and the sequence they need to take place to integrate the new components into a functional system.

PROJECT EXECUTION PLANS (PEP)

Overall document written by the project team in advance of starting the project defining how the project will be executed. Typical sections of the PEP are the Change Management Plan, Stakeholder Management Plan, Schedule Management Plan, Cost Management Plan, and of course the Commissioning Management Plan. Also known as the Project Implementation Plan (PIP).

PROJECT IMPLEMENTATION PLAN (PIP)

The overall project document defining how the project will be executed. The PIP defines project processes such as procurement strategy, communication plan, change management plan, staffing plan, stakeholder engagement plan, quality management plan, as well as others.

PROVISIONAL ACCEPTANCE CERTIFICATE (PAC)

Following completion of performance verification, the contractor is issued aPAC to confirm they have met all contract requirements and that the warranty and performance guarantee period can start.

PUNCH LIST

A list of items to be corrected by the contractor, also known as a deficiency list.

Commissioning Dictionary

QUALITY ASSURANCE (QA)

Audits performed by the consultant or owner to ensure the contractor is fulfilling their QC role and their quality management plan. Audits can be conducted by in-field inspections as well as documentation review. Typically in-field verification is more thorough than paperwork audits.

QUALITY CONTROL (QC)

Verification performed by the contractor to ensure equipment is installed per drawings and all specification requirements have been met.

REPORTING

Documentation generated during and after commissioning to inform stakeholders of progress or inform of any issues.

REQUEST FOR INFORMATION (RFI)

A formal document submitted to the project team requesting clarification of specifications or drawing details.

REQUEST FOR STARTUP (RFSU)

Formal process to request that new systems be energized for the first time.

RESOLUTION

This is an amicable settlement of a dispute between the parties to a contract.

Commissioning Dictionary

RISK MANAGEMENT

The process to identify future risks and determine how best to mitigate risks before they turn into issues. Risk management should be a part of day-to-day activities in order to forecast potential risks and have a contingency plant should they occur.

SAFE WORK PROCEDURE (SWP)

A document defining the required safety measures to be taken to perform specific tasks. SWPs allow the work to be planned in advance, hazards to be identified, so that appropriate mitigations can be put in place to protect workers.

SNAG LIST

A list of issues discovered during commissioning, also called a deficiency list.

SPARES

Additional quantity of equipment purchased in advance should there be a damaged or failed component during installation or commissioning.

STANDARD OPERATING PROCEDURE (SOP)

Detailed guidelines defining the typical operation of new equipment for the various scenarios that the plant systems are required to perform.

STARTUP

Following completion of commissioning, the systems or plant processes are initiated for the first time. Electrical energy is applied, process fluids are introduced, and the intended function of the plant is initiated.

As the plant process is started up, parameters are monitored to ensure correct operation per specifications.

STOP LOGS

Structures used to control the flow or direction of process fluids. Logs are dropped into channel guides and stacked on top of reach other creating a water-tight barrier stopping or directing the flow of fluids.

SUBMITTAL LOG

A list of all the documents used on the project indicating the name, document number, status and revision. Also know as the Master Document Register (MDR) or Master Document List (MDL).

SWITCHGEAR

Electrical equipment used to control power within the plant. A switchgear lineup typically contains several high voltage breakers used to initiate power to devices, as well as open to protect the equipment during a fault condition. Switchgear breakers can be remotely operated and often have protection settings applied that are coordinated with other electrical equipment ratings.

SWITCHYARD

An outdoor air insulated electrical bus network to open and close high voltage power distribution to major apparatus. A switchyard can contain metal bus work, high voltage transformers, and breakers. All equipment is enclosed by a physical perimeter barrier (such as a fence) to protect the public and wildlife from accessing hazardous equipment.

SYSTEMS INTEGRATOR

The group responsible for the automation system that interconnects between all plant equipment, therefore integrating individual components into a system or plant process.

TEMPORARY WORKS

Constructed items that are only required for a short duration of time, and do not form part of the permanent plant systems.

TEST PLAN

A document defining how testing will be executed. This gives the higher-level plan answering "how" testing will be done such as the resources required, any special tools required, or the sequence of activities. The plan is different from the procedure, but the two documents can often be combined. A test plan can also be called a commissioning plan.

TEST PROCEDURE (CP)

A document defining the detailed steps to be taken to execute a test. This gives the specific steps such as change a setpoint, confirm an alarm limit, or record a specific value. The procedure is different from the plan, but the two documents can often be combined. A test procedure can also be called a commissioning procedure.

TRAINING

Classroom instructions or hands-on field instructions given to the plant operators (or others) that teaches them about the new systems and how to

operate and maintain them.

VARIABLE FREQUENCY DRIVE (VFD)

An electrical device used to control the startup, shutdown, and speed operation of an electrical motor or pump. The VFD provides a more controlled startup and shutdown, minimizing peak electrical demands and decreases stress on rotating equipment.

VENDOR

The group responsible to supply equipment to the contractor or owner. The vendor is often required to come to site for initial functional/performance testing of the equipment.

VENTILATION

Part of the HVAC system, this is the ductwork and fan systems to move air in and out of a building space.

WALKTHROUGH

A joint inspection often including the constructor, consultant, and owner, to identify and confirm rectification of deficiencies.

WATER SYSTEM

The pumps and supply piping used to distribute water throughout the plant.

WET COMMISSIONING

Testing installed equipment with process control fluids.

WITNESS TEST

A test conducted in the presence of the consultant or owner to verify in real-time that equipment is operating per specification.