Commissioning System File

Project		
System		
Plant		
Prepared by		Date:
Checked By		Date:
Validated By		Date:

Commissioning System File

System:

INDEX

1. System P&ID’s

Marked up copies of the systemized P&ID’s are inserted on the following pages.

2. Decontamination procedure and Isolation Register

During a project where some or all of the new construction involves upgrading or retrofitting of existing equipment, it may be necessary for the commissioning team to manage the decontamination and isolation of the old equipment to facilitate a safe handover to the construction team.
The following documentation will manage that process.

Decontamination Procedure		
Project:	System:	
Plant Equipment :-		P&ID Ref. :-
Risk Assessment Number:	Associated Permit Numbers:	Hazardous Substance Classification :- **Major hazard** **Hazardous** **Low Hazard**
Define Work :-		

Steps	**Decontamination method**	**Date/Time**	**Complete/ Initials**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

ISOLATION REGISTER	

Project:	System:	Area:	

Valve isolations/Re-commissioning log

Valve Number	Isolation				Re-commissioning		
	Valve Position	Lock Number	Date Isolated	Isolated by : (initials)	Lock removed Open/Closed	Date	Initials

Electrical Isolation / Re-commissioning Log

Item Reference	Isolation			Re-commissioning	
	Lock No.	Locked off by :	Date isolated	Lock removed by:	Date

Trace heating log

Vessel or pipe work Ref.	Date removed	Signed	Date replaced	Signed

Positive Electrical Isolation & Re-commissioning Log

Item Ref.	Fuse removed by	Fuse Cert. No.	Disconnected by	Date isolated	Reconnected by	Date reconnected

Physical Isolation Log

Location	Spade, Spool or Blank fitted	Isolated by	Date isolated	Isolation removed by	Date isolation removed

Radio Active Source Isolation

DATE	SHUTTER CLOSED	SOURCE REMOVED	DATE	SOURCE REPLACED	SHUTTER OPEN

3. System cleaning checklist & procedures

During the construction integrity test commissioning must follow with a cleaning procedure for the pipe sections included in the test.
The Construction group may have the cleaning procedure incorporated within the integrity test procedure, if this is the case commissioning need to create a list of system pipe lines to track progress.
If required a line by line valve by valve procedure needs to be written for a cleanliness check, these procedures are to be written utilizing the piping isometrics as a guide.

System list of pipe work to be cleaned		
Project:	System:	Page
Author:	P&ID's:	

PLEASE NOTE PRIOR TO THE CLEANING :

. All open pipe ends MUST be secured to avoid excessive movement.
. Always blow away from any vessels.
. Position target plates if required, to deflect debris to a safe location and or use as proof of cleanliness.
. All personnel not associated with the blow are to be removed from the area.
. All personnel involved with any high-pressure blow MUST wear ear protection.
. After the cleaning process, all open pipe ends MUST be closed to avoid recontamination. If pipe work is left for a period, after the clean, then a visual inspection of the pipe needs to be done, prior to its commissioning.

LINE	DESCRIPTION	TYPE OF CLEAN	SIGNED / DATE

Cleaning Procedure		
Project:	System:	Procedure Number:
Pipe line numbers:		
Author:	P&ID's:	

PLEASE NOTE PRIOR TO THE CLEANING:

- All open pipe ends MUST be secured to avoid excessive movement.
- Always blow away from any vessels.
- Position target plates if required, to deflect debris to a safe location and or use as proof of cleanliness.
- All personnel not associated with the blow are to be removed from the area.
- All personnel involved with any high-pressure blow MUST wear ear protection.
- After the cleaning process, all open pipe ends MUST be closed to avoid recontamination. If pipe work is left for a period, after the clean, then a visual inspection of the pipe needs to be done, prior to its commissioning.

STEP	ACTION	MEATHOD	SIGNED / DATE

4. Hazard Study actions

Insert in this section relevant pages from any Hazard Study that has an implication to the commissioning team.

Prior to introduction of chemicals the commissioning manager will need to be ensure all Hazard Study actions that have a startup implications are complete and signed off.

5. Equipment Check Sheets, off and on site checks

List of Vessel Check Sheets

1. Off site check – Tank or Drum
2. On site check – Tank or Drum
3. Off site check – Column
4. On site check – Column
5. Off site check – Rotating machinery
6. On site check – Rotating machinery
7. Auxiliary Systems – Lube oil, hydraulic systems, HVAC etc.
8. Off site check – Heat Exchangers
9. On site check – Heat Exchangers
10. Conveyer
11. Mill
12. Sieve
13. Pump
14. Fan/Blower
15. Furnace or Burner
16. Turbine

Off-Site Equipment Inspection Check Sheet Tank or Drum						
Equipment Title:			Project:			
System :		Shop Location:				
Author:	Date:	P&ID's:				
Vessel data sheet available? Y N						
Step	Item	Yes	No	N/A	Comments	Sign Date
1	**Check internal cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Check nameplate					
3	Check condition of lining					
4	Check position of assembled covers and/or flanges.					
5	**Check dip pipes for:**					
	Length					
	Anti-siphon hole					
	Lining/Coating					
6	Check internal dip pipe supports					
7	Check for clearance between dip pipes and moving equipment					
8	Check bottom support/bearing for agitator. (See Rotating Machinery)					
9	Check test joint material					
10	Check internal valve setting and operation					
11	Check vortex breaker					
12	Check baffles or weirs.					
13	Check sump					
14	Other internals; Demisters, support grids, weirs					
15	Witness pressure test. Log all test data in comments section.					
16	Witness leak test of assembled vessel.					
17	Witness vessel drained and dry and ready for transportation					
18	Flange finish as per vessel drawing					
19	All branches fitted as per drawing					
20	Ensure all temporary transportation brace is identified					
21						
22						
23						
24						
25						

On-Site Equipment Inspection
Check Sheet
Tank or Drum

Equipment Title:	Project:
System :	P&ID:
Author:	Date:

Step	Item	Yes	No	N/A	Comments	Sign Date
1	Check vessel level or slope as appropriate.					
2	Check vessel bolted down.					
3	Check for sliding support assembly.					
4	Check saddles/mountings settings					
5	Check corrosion/insulation packing under vessel.					
6	Check vessel and saddle earthing straps fitted correctly					
7	Witness final closure of vessel.					
8	Witness fitting of agitator etc.					
9	Gasket jointing material					
10	Check access platforms conform to standards.					
11	Check vent branches clear.					
12	Check vessel name plate details.					
13	Check vessel identification painted correctly.					
14	Check vessel relief stream inspected.					
15	Check vessel relief stream labeled.					
16	Check vessel PV number.					
17	Check registration documents are on file					
18	Check sight glasses correctly installed.					
19	Check vessel adequately illuminated.					
20	Check vessel insulation.					
21	Witness fitting of joints between vessel and first isolation valve.					
22	Check vessel painting.					
23	Check installation of fire cladding					
24	Check that all transportation bracing has been removed					
25						
26						
27						
28						
29						
30						

Off-Site Equipment Inspection Check Sheet Column/Tower						
Equipment Title:			Project:			
System :		Shop Location:				
Author:	Date:	P&ID's:				
Vessel data sheet available? Y N						
Step	Item	Yes	No	N/A	Comments	Sign & Date
1	**Check internal cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Check condition of lining.					
3	Check orientation of assembled sections and covers					
4	**Check installation and fitting of internal components, where applicable**					
	Packing grid supports					
	Bubbly cap trays					
	Bubble cap tray weirs					
	Bubble cap heights					
	Downcomer position and dimensions					
	Distributors					
5	Feed nozzles and/or sprays					
6	Check test joint material.					
7	Witness pressure test.					
8	Witness vessel drained and dry.					
9	Witness leak test of assembled vessel					
10	Demister pads fitted correctly					
11	Flange finish as per vessel drawing					
12	All branches fitted as per drawing					
13	Ensure all temporary transportation brace is identified					
14						
15						
16						
17						
18						
19						
20						
21						

On-Site Equipment Inspection Check Sheet Column/Tower	

Equipment Title:	Project
System :	P&ID:
Author:	Date:

Step	Item	Yes	No	N/A	Comments	Sign Date
1	Check vessel is vertical.					
2	Check vessel is bolted down and appropriate guides fitted, including insulation and/or anti friction pads.					
3	Check internal Cleanliness, clean, dry and oil free. Check condition of any lining, ensure no holes or tares					
4	Column packing type is:					
5	Column packing quantity is :					
6	Check packing support grids.					
7	Check Bed limiters					
8	Check distributors fitted and level					
9	Check demister installed correctly					
10	Check feed/spray nozzles for fitting and orientation					
11	Check bubble cap trays fitted correctly and settings correct					
12	Check downcomers length/height.					
13	Check vent branches clear.					
14	Check drain branches clear.					
15	Check earthing strap if applicable					
16	Check lagging as per specification					
17	Witness vessel closure.					
18	Check painting					
19	Check vessel name plate details					
20	Check vessel identification painted correctly					
21	Check vessel relief stream inspected.					
22	Check vessel relief stream labeled.					
23	Check statutory paperwork is in order					
24	Check access platforms conform to standards					
25	Ensure all transportation bracing removed					
26						
27						
28						
29						
30						
31						

Off-Site Equipment Inspection
Check Sheet
Rotating Machine

Equipment Title:		Project:	
System :	Shop Location:		
Author:	Date:	P&ID's:	
Vessel data sheet available? Y N			
Test certificates available for all pressure retaining parts? Y N			

Step	Item	Yes	No	N/A	Comments	Sign & Date
1	**Check general cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Check all drain plugs are fitted.					
3	Check orientation of assembled sections and pieces of kit, if skid mounted					
4	Witness casing pressure test.					
5	Witness performance trial run					
6	**Check guards:-**					
	Location					
	Security					
	Effectiveness					
7	**Check drive motor:-**					
	Type					
	Guard					
	Numbering					
	Rotation					
8	Check drive alignment					
9	Check mounting of Base frame and Flanges					
10	Check all name plate detail					
11	Witness general machine leak test					
12	Check machine is suitable for transport, all open ends blinded					
13	Check integrity of preservation pressure					
14	Confirm all packing is of the correct type					
15	All couplings are clean and lubricated?					
16						
17						
18						
19						
20						

On-Site Equipment Inspection
Check Sheet
Rotating Machinery

Equipment Title:		Project				
System :		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign Date
1	Check all transportation bracing/packing is removed					
2	Check special tools available					
3	Check foundations/bolding down.					
4	Check laser alignment of drive.					
5	Check alignment of belts and tensions					
6	Check direction of rotation.					
7	Check alignment of pipe work and correct loading					
8	Check alignment of ducts.					
9	Check lubrication					
10	Check all drain plugs are fitted.					
11	Check gland seal and packing.					
12	Check mechanical seal.					
13	Check shaft seal					
14	Check shaft grounding.					
15	Check gland flushing					
16	Check machine labeling and identification					
17	Check access for operation					
18	Check access/removal for maintenance.					
19	Check position and operation of local stop/start buttons.					
20	Check labeling of stop/start buttons					
21	Check temporary strainer installed					
22	Check for correct fitting of insulation					
23	Check for cooling on bearings and oil systems					
24	Confirm correct packing and glands installed					
25	Check machine instrumentation					
26	Check/record amps loading					
27	Check vibration					
28	Check noise					
29	Check load settings/calibration					
30	Check machine guarding					
31	Confirm all inlet and outlet pipes are clean					
32	E-Stop easily accessible					
33						
34						
35						
36						
37						

On-Site Equipment Inspection Check Sheet Auxiliary System	

Equipment Title:		Project				
System :		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign Date
1	Check all transportation bracing/packing is removed					
2	Check special tools available					
3	Check foundations/bolding down.					
4	Check alignment of any drives					
5	Check direction of rotation.					
6	Check alignment of interconnecting pipe work					
7	Check lubrication and greasing					
8	Check all drain plugs are fitted.					
9	Check gland seal and packing.					
10	Check mechanical seal.					
11	Check shaft grounding					
12	Check machine labeling and identification					
13	Check access for operation					
14	Check access/removal for maintenance.					
15	Check position and operation of local stop/start buttons.					
16	Check labeling of stop/start buttons					
17	Check temporary strainer installed					
18	Check for correct fitting of insulation					
19	Confirm correct packing and glands installed					
20	Check machine instrumentation					
21	Check/record amps loading					
22	Check vibration					
23	Check noise					
24	Check load settings/calibration					
25	Check machine guarding					
26	Confirm all inlet and outlet pipes are clean					
27	Check all components with design documents					
28	Ensure system has been flushed and clean					
29	Ensure all cooling systems are ready for operation					
30	Ensure unit does not create a safety hazard					
31	E-Stop easily accessible?					
32						
33						
34						
35						
36						

Off-Site Equipment Inspection Check Sheet Heat Exchangers						
Equipment Title:			Project:			
System :		Shop Location:				
Author:	Date:	P&ID's:				
Vessel data sheet available? Y N						
Step	Item	Yes	No	N/A	Comments	Sign & Date
1	**Check General cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Check orientation and fitting of all end boxes and or covers					
3	Check test joint material.					
4	Check baffles & weirs					
5	Witness pressure test.					
7	Witness vessel drained and dry.					
8	Witness leak test of assembled unit					
9	Ensure vessel fit for transportation, no open ends					
10	Check integrity of preservation pressure					
11	Ensure all temporary transportation bracing is clearly listed:					
12	Confirm name plate details					
13						
14						
15						
16						
17						

On-Site Equipment Inspection Check Sheet Heat Exchangers						
Equipment Title:		Project				
System :		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign Date
1	Vessel checked for level.					
2	Check vessel properly bolted down and if applicable guides are fitted.					
3	**Check internals are :** -					
	Clear of Debris					
	Dry					
	Oil Free					
4	Check for sliding support assembly					
5	Check saddles/mountings assembly:					
6	Check corrosion/insulation packing under vessel feet/legs					
7	Check vessel & saddle earthing straps					
8	Check bolting					
9	Witness vessel closure.					
10	Check jointing					
11	Check vent branches suitable & clear.					
12	Check drain branches clear.					
13	Check insulation as per specification					
14	Check painting specification					
15	Check vessel name plate details					
16	Check vessel identification painted correctly					
17	Check vessel relief stream has been inspected and labeled					
18	Ensure statutory paperwork is complete					
19	Check any access platforms conform to standards					
20	Confirm all transportation bracing has been removed					
21	Check for pipe high points where air could be trapped					
22						
23						
24						
25						
26						

On-Site Equipment Inspection Check Sheet Conveyor						
Equipment Title:		Project:				
System:		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign & Date
1	**Check cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Hold down bolts installed & secure					
3	Gearbox fitted					
4	Guards fitted, (to comply with requirements)					
5	Shaft correctly fitted					
6	Scroll securing bolts locked					
7	Stop start button installed and labeled					
8	Can scroll be removed for maintenance					
9	Is scroll/motor direction correct					
10	Motor fitted					
11	Can scroll be rotated by hand and clear of obstruction					
12	Correct lubrication and greasing conducted					
13	Belt alignment instrumentation correctly installed					
14	Safety pull cord/E-Stop correctly installed and accessible?					
15	All platforms and access ways conform to correct standards					
16						
17						
18						
19						
20						

On-Site Equipment Inspection Check Sheet Mill						
Equipment Title:		Project:				
System:		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign & Date
1	**Check cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Hold down bolts installed & secure					
3	Gearbox fitted					
4	Guards fitted, complies to standards					
5	Shaft correctly aligned					
6	Lubrication and greasing completed					
7	Stop start button installed and labeled					
8	Can key parts be safely removed for maintenance					
9	Motor rotation correct					
10	Motor fitted					
11	Scalping receiver in position?					
12	All instrumentation installed as per design and installation manuals and P&ID					
13	Inlet and outlet pipe work clean and ready for operation					
14	Has the equipment been suitably grounded					
15	E-Stop easily accessible?					
16						
17						
18						
19						
20						

On-Site Equipment Inspection Check Sheet Screen						
Equipment Title:		Project:				
System:		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign & Date
1	**Check cleanliness**					
	Clear of debris:					
	Dry:					
	Grease Free:					
2	Hold down bolts installed & secure					
3	Gearbox fitted					
4	Guards fitted, (to comply with requirements)					
5	Guards fitted, complies to standards					
6	Are additional guards needed to protect personnel from the sieve rotational movement					
7	Lubrication and greasing completed					
8	Stop start button installed and labeled					
9	Can key parts, (screens) be safely removed for maintenance and cleaning					
10	Motor rotation correct					
11	All instrumentation installed as per design and installation manuals and P&ID					
12	Inlet and outlet pipe work clean and ready for operation					
13	Has the equipment been suitably grounded					
14	Is an alarm installed required to warn of equipment starting?					
15						
16						
17						
18						
19						
20						

On-Site Equipment Inspection Check Sheet Pumps							
Equipment Title:			Project:				
System:					P&ID:		
Author:			Date:				
Step	Item		Yes	No	N/A	Comments	Sign & Date
Pre-running							
1	Motor nameplate in place & correct						
2	Glands and mechanical seals in position						
3	Check adequate spares available in stores						
4	Loose bolts						
5	Impeller in position						
6	Pump turns freely	Uncoupled					
		Coupled					
7	Alignment checks complete						
8	Earthing correct						
9	Guarding safe and rigid						
10	Bearings greased/oil level OK						
11	Inlet pipe clean						
12	Relief devices installed and tested to correct specification						
13	Can pump be drained						
14	Can pump be easily removed for maintenance						
Running							
1	Glands and mechanical seals						
2	Direction of rotation correct						
3	Post running checks of strainers carried out						
4	Running checks	Date & Time:					
	Suction Pressure						
	Delivery Pressure						
	Flow						
	Temperature						
	Ammeter reading						
	Vibration and noise						
	Bearing Temps						
5	Drain valves closed & blanked						
6	Lubrication levels OK						

On-Site Equipment Inspection Check Sheet Fan/Blower							
Equipment Title:			Project:				
System:					P&ID:		
Author:			Date:				
Step	Item		Yes	No	N/A	Comments	Sign & Date
Pre-running							
1	Motor nameplate in place & correct						
2	Glands and mechanical seals in position						
3	Check adequate spares available in stores						
4	Loose bolts						
5	Impeller in position						
6	Pump turns freely	Uncoupled					
		Coupled					
7	Alignment checks complete						
8	Earthing correct						
9	Guarding safe and rigid						
10	Bearings greased/oil level OK						
11	Inlet pipe clean						
12	Relief devices installed and tested to correct specification						
13	Can pump be drained						
14	Can pump be easily removed for maintenance						
Running							
1	Glands and mechanical seals						
2	Direction of rotation correct						
3	Post running checks of strainers carried out						
4	Running checks	Date & Time:					
	Suction Pressure						
	Delivery Pressure						
	Flow						
	Temperature						
	Ammeter reading						
	Vibration and noise						
	Bearing Temps						
5	Drain valves closed & blanked						
6	Lubrication levels OK						

On-Site Equipment Inspection Check Sheet Furnace or Burner	

Equipment Title:	Project
System :	P&ID:
Author:	Date:
Vendor manuals and data sheets must be available	

Step	Item	Yes	No	N/A	Comments	Sign Date
1	Vessel checked for level.					
2	Check vessel properly bolted down and if applicable guides are fitted.					
3	**Check internals are :** -					
	Clear of Debris					
	Dry					
	Oil Free					
4	Check for vessel expansion materials are suitable. Ensure no clashes with steel, pipe etc.					
5	Ensure weather protection is suitable					
6	Confirm correct location of instrumentation					
7	Check vessel & saddle grounding straps					
8	Check bolting					
9	Witness vessel closure. Ensure inspection doors are sealed					
10	Check jointing					
11	Check all air dampers operate correctly					
12	Check snuffing connections and equipment					
13	Check insulation as per specification					
14	Fully check burner management system					
15	Check vessel name plate details					
16	Check vessel identification painted correctly					
17	Ensure all purge and coolant air flows are acceptable					
18	Check all peep holes and flame eyes are operable					
19	Check any access platforms conform to standards					
20	Confirm all transportation bracing has been removed					
21	Check explosion doors if fitted					
22	Check all fuels are isolated at a safe distance					
23	Check suitable location of E-Stop					
24	Check fire fighting equipment in vicinity					
25	Ensure correct installation of all refractory’s					

On-Site Equipment Inspection Check Sheet Turbine	

Equipment Title:		Project:				
System :		P&ID:				
Author:		Date:				
Step	Item	Yes	No	N/A	Comments	Sign Date
1	Check all transportation bracing/packing is removed					
2	Check special tools available					
3	Check foundations/bolding down.					
4	Check laser alignment of drive.					
5	Check lubrication					
6	E-Stop easily accessible					
7	Check the equipment supplied against the schedule of auxiliary and associated equipment for correct calibration and settings					
8	Check for correct functioning and setting of fuel gas supply system					
9	Check the turbine washing system for correct operation against the manufacturer's manual					
10	Check the lube oil mist extractor system					
11	Check the air intake system for cleanliness and correct operation					
12	On lube and seal oil systems particular attention should be paid to proper cut in of auxiliary/ emergency pumps					
13	Check proper functioning of inlet guide vanes					
14	Check proper installation of acoustic enclosure and sealing strips, etc					
15	Check sealing air system					
16	Check all auxiliary equipment (i.e. Torque converter, ratchet device, start-up motors/engines, etc.) for proper installation. Check all such equipment against specific items as described in the applicable paragraphs of the installation					
17	Check that anti-rotation device is available/installed					
18						
19						
20						
21						
22						

6. System Punchlists

Punchlist		
Punchlist Type: Preliminary/Final	Project	Page 1 of
System :	P&ID:	
Author:	Date Requested:	Date Issued:

Priority: 1. Complete before Handover. 2. Complete after Handover. 3. Item for discussion

No.	Pipe, Vessel, Loop Tag No. Elec. Circuit Tag No.	Description	Action on	PRIORITY	Action completed & signed off by

Punchlist Continuation sheet					
No.	**Pipe, Vessel, Loop Tag No. Elec. Circuit Tag No.**	**Description**	**Action on**	**PRIORITY**	**Action completed & signed off by**

Post Punch list Check sheet	

PLEASE NOTE: This sheet should be completed post the actual punchlist as an "Aide Memoir".
This check sheet should never be used as a substitute to actually physically checking the system being punch listed.

No	Description		Checked & signed off	Comments
1	Has this system been **totally** checked against the relevant P&ID?			
2	Has the pipeline finish been fully checked?	Insulation		
		Painting		
		Trace Heating		
		Flange covers		
		Labels		
3	Have potential hazards installation may have created been considered?	Splashing from drains		
		Air blow off points		
		Potential for water pools, (uneven surfaces)		
		Trip hazards, kerbs, pipes, etc.		
		Noise		
		Headroom		
4	Have all HAZOP actions that have had a construction implication been considered?			
5	Component check.	Correct valve type as specified		
		Correct gaskets in all flanges		
		All In-line equipment correct as specified		
		All bolts checked for tightness		
		All internals fitted, e.g. Filter elements, NRV internals		
		Other		
6	Have all valves been checked for ease of operation, pinch points and loose bonnet bolts?			
7	Have all control valves been checked that they are fitted correctly for direction of process flow?			

No	Description		Checked & signed off	Comments
8	Have all filters, Non-return valves and other in-line pieces of equipment been checked that they are fitted correctly for direction of process flow?			
9	Have all vents and drains been checked to ensure?	Safety of location		
		Access		
		Direction of exhaust		
		Splashing		
		Pooling		
		Space for blind flange removal and flexible pipe fitting is adequate		
		Are there sufficient drains on pipe including manifolds		
10	Have All grounding straps been checked, no loose connections or loose bolts?			
11	Have all instruments and electrical items been checked for?	Accessibility		
		Can gauges be read		
		Do impulse lines and cables create a hazard		
		Are junction boxes in the way		
		Are all stop buttons accessible, labeled and guarded if necessary		
		Motor guards checked and tight, no loose screws		
		Has all instruments been labeled in the filed		
12	Have All relief streams been checked?	Exhaust lines clear		
		Labeled		
		Relief valves tested & tagged		
		Bursting discs fitted and tagged		
		Supports appear adequate		
13	Have all pipelines been checked to ensure no visible mechanical damage has been made?			
14	Has a list of all scaffolding to be removed prior to handover been made and added to the punch list?			

No	Description		Checked & signed off	Comments
15	Have all structures and steelwork been checked for?	Loose bolts		
		Safety of stairways, obstructions etc.		
		Grouting		
		Kick plates		
		Lighting		
		Handrails, (fitted & secure)		
		Touch up paintwork		
		Holes in flooring		
16	Have all areas been checked for poor housekeeping, excessive construction debris and waste			
17	Have all areas been checked to ensure all safety equipment, eye wash boxes, BA sets etc, safety showers etc have been installed and checked			
18	Has all rotating equipment been checked to ensure guards are in place and secure			
19	Are there any lifting beams? If so are they tested and stamped with relevant ID markings?			

7. Action upon Alarm Sheet

ALARM ACTION SHEET		
Alarm Title	Loop Number	P&ID Number
Settings	Purpose of Alarm	
Response time		
POSSIBLE RESPONSES		
CONSEQUENCES OF A FAILURE TO RESPOND		
START UP/SHUT DOWN IMPLICATIONS		
Author:	Validated by:	Date

8. Handover Certificate Constructions to Commissioning

Construction to Commissioning Handover Certificate	

HANDOVER CERTIFICATE FOR COMMISSIONING SYSTEM……. FROM THE CONSTRUCTION MANAGER TO THE COMMISSIONING MANAGER

COMMISSIONING SYSTEM REFERENCE:	DATE:

This certificate certifies that the ……. system has been completed and is available for Process Commissioning This is subject to any reservations agreed by the Construction Manager and the Commissioning Manager. It is understood these reservations must be completed in full as soon as is practicable. These reservations are detailed below.

If No reservations for this system apply, please insert N/A. in the boxes.

Reservation Reference Number	Reservation Details

Signatures

System Offered by:	Title & Signature	Date:
System Accepted by:	Title & Signature	Date:

9. Project documentation check sheet prior to introduction of safe chemicals

It is probable that the jobsite or client will have in place a system for checking the new plant is ready to accept chemicals, this is usually in the form of Management of Change procedure, (MOC) Hazard Study process or a Pre Start up Safety Review (PSSR) system.

Please use the guide words below to check that the detail within the table is found within the job or client system. If some of the check words are not found, discuss with the client and incorporate accordingly. If there is no system in place use this paperwork system in its entirety.

Documentation check sheet prior to chemical introduction			
Team Members: (Typical listed) Project Manager - Mechanical Engineer - Electrical Engineer - Process Engineer - Operations Manager - SHE Advisor - Commissioning Manager -	**PROJECT**	**Author**	**DATE**

No	Section	Guide word	Comments and action	Action On
1	**Installation**	Has a check of pipe work, valves, instrumentation configuration and supports against P&ID's and isometrics been made?		
		Check equipment labeling, insulation and valve numbering, testing and labeling of stop and start buttons and isolators.		
		Have correct materials of construction been used.		
2	**Relief Systems**	Correctly installed and documented to approved company and standards.		
		Schedule of inspections in place.		
3	**Interlocks, Shutdown systems and Alarms**	All commissioning checklists and procedures completed.		
		Interlock and shutdown test procedures written		
		Practicality of test methods reviewed and approved		
		List of persons responsible for testing in place.		
		Alarm action review completed		
		Procedure in place for the control of interlock and S/D defeats.		
4	**Restrictor orifices or other flow restricting devices.**	Are all in place, labeled, documented and a system available to sustain.		
5	**Equipment Inspections**	Check availability of equipment manufacturer's and independent authorities test certificates.		
6	**HAZOP**	Have all requirements and actions from the HAZOP been implemented and completed		

No	Section	Guide word	Comments and action	Action On
7	**Operating and Maintenance Procedures.**	Written and validated for normal operation, start-up, planned and emergency shutdowns and decontamination.		
		Maintenance procedures compiled		
		Log sheets developed		
		General Risk Assessments written, if applicable		
8	**Spares**	Systems for control of materials used, e.g., gaskets, valves, instruments, etc. in place and has been updated for the new plant		
9	**Control of Hazardous Substances**	Assessments and controls in place that meet EPA and RCRA requirements.		
10	**Noise**	Noise assessment carried out?		
		Ear protection zones marked.		
11	**Effluents**	Sampling schedules in place, ownership and responsibilities defined		
		Systems for disposal of samples, spillages, etc. defined and in place		
12	**Ionizing Radiation**	Authorities informed?		
		Installation and monitoring system in place.		
13	**Major pipe line isolations**	Accessibility, operability and labeling of major isolations checked.		
		System to monitor fitting of lock set-up		
14	**Emergency Power, Services and Communications**	Are they satisfactory for ongoing operation?		
		Test schedules in place.		
15	**Training**	Program complete, validated and records in place (should cover operating and maintenance personnel)		
16	**Computer control systems**	Validation and acceptance checks complete.		
		Functional design paperwork available		
17	**Management of Change, MOC**	MOC generated and complete to commissioning stage?		
18	**Drawings**	P&ID's updated and indexed		
		Electrical loop, one-line and instrument loop drawings available and issued to commissioning/operations		

No	Section	Guide word	Comments and action	Action On
19	**Management of Change, MOC**	MOC generated and complete to commissioning stage?		
20	**Drawings**	P&ID's updated and indexed		
		Electrical loop, one-line and instrument loop drawings available and issued to commissioning/operations		
21	**Site Emergency Procedures**	Confirm that any necessary changes have been made to plant, site or off-site emergency procedures.		
22	**Other site Procedures**	Do other site procedures need to be modified and has this been done?		
23	**External Approvals**	Are there any external approvals required for this project		
		Obtain key documentation		
24	**Construction handover**	Is the handover procedure in place?		

Documentation check sheet prior to safe chemical introduction

Action register

No.	Section	Guideword	Comments / Action required	Action On	Completed by

10. Safe Chemical commissioning authorization and Pre-commissioning procedures

In some circumstances the project or client may need a procedure in place to clearly confirm, check and communicate prior to introduction of energy into the system for initial commissioning activities such as leak testing. This check sheet will manage that process.

Authorization to Introduce Safe Chemicals				
Project:		System :		Page 1 of
Author:	Date:	P&ID's covered:		
No	**Item**	**Authorization**	**Signature**	**Date**
1	System pipe work closed in, all openings have been fitted with appropriate equipment or blinds			
2	Critical joints witnessed.			
3	Punch list complete, all high priority items closed out.			
4	Critical Valve Alignment Checks carried out. (Including relief stream interlock alignments).			
5	Valves lined up for testing			
6	Leak/pressure test procedure written			
7	Any MOC checked to ensure that installation is per design			
8	All safety equipment in position			
9	All Permits to Work and Confined Space Entry permits have been signed off			
10	All blanks, blinds or pancakes in correct positions & isolation register completed.			
11	All personnel have been informed of the introduction of a chemical for testing purposes.			
12	Is equipment sufficiently supported			
13	Has PSSR and documentation check been completed?			

Authority is given to introduce: _____ for leak test and SAFE chemical trials and commissioning purposes only.

System Name : _____

I am satisfied that the general housekeeping/safety standards in the area are satisfactory. We agree the Date/Time for introduction of process fluids will be :

Commissioning Manager Sign: Date

Commissioning Engineer Sign Date

The following list details examples of pre-commissioning procedures that commissioning can perform potentially during construction

Pre-Commissioning Procedure List

- Mechanical interlock checks
- Fitting of all locks on valves
- Checks to ensure check valves are fitted with internals
- Packing of a Distillation column
- Packing a Reactor with Catalyst
- Filling of desiccant into Drying Tower
- Installation of filter medium, cartridges etc.
- Checks to ensure pipe work falls in the correct direction
- Installation of filter bags into a Bag House or Dust Collector
- Procedure to check flexible couplings and bellows are fit for operation.
- Filling a Mill with Beads
- Procedures to check the operation without any chemicals of a DCS control sequence

These procedures can be numbered such that they can be easily referenced on a detailed commissioning schedule.

Pre-Commissioning Procedure	

TITLE:	**Ref:**	Page 1 of

Project:	System:
Line & Vessel numbers:	P&ID covered:
Author:	Date:

STEP	ACTION	METHOD	Comments	Signed Date
1				

Procedure to …… has been completed.

Signed by:	Date:

11. Leak Test Check list and procedure

Leak test Procedure Checklist		
Project	System :	Page 1 of
P&ID's, (which must be attached to this procedure)	Author:	Date:

SUB-SYSTEM - Identify all vessels/lines to be tested.

ISOLATIONS - Identify isolations required for test (spades, double block and bleeds, etc)

VALVES - Identify valves which need to be opened for test (control valve shutdown valves, etc)

Test Input Points Tick and Sign

Location :		**Test Medium**	**Rig Fitted**	**Rig Removed**
Test Pressure –		Water Air Nitrogen Other		
Pressure Indication Point –				
Release Pressure At –				
Drain Liquor / Gas To				
All joints to be soap tested - Yes / No Other test if not soap test - N/A / No / Yes - Identify:				

Expected Test Duration Time:		**Actual Test Duration Time:**	

Pressure drop with time

Initial Pressure :		9 Hrs :	
1 hours :		12 hrs :	
3 hours :		Final Pressure :	
6 hours :		Leaks Found?	YES / NO Identify location with tag, and mark on system P&ID.

Remember: Temperature and pressure differential must be considered.

Leak test Procedure	

Step	Operation	Comments	Signed off

The equipment and lines included in this procedure have passed the test as defined above:

Commissioning Engineer: Signed:
Date:

All isolations removed and valves returned to normal required position:

Commissioning Engineer: Signed:
Date:

Plant Representative: Signed:
Date:

12. Instrument Check Sheet

Individual loop check sheets will be prepared throughout the course of construction. As an aid to collating all instrument information per system with handover in mind, the check sheet below should be compiled and signed off by the C/E/I and or system commissioning engineers to signify progress and completion.

Instrument Check Sheet			
Project:		System :	
Loop No	Description	In position in field	Tested on DCS & ready for Commissioning? Signed /Date

13. Motor Check Sheet

Individual motor check sheets will be prepared throughout the course of construction. As an aid to collating all electrical information per system with handover in mind, the check sheet below should be compiled and signed off by the C/E/I and or system commissioning engineers to signify progress and completion.

Motor Check Sheets

Project: | System :

Drive	Start Local	Stop Local	Start DCS	Stop DCS	ESD Field	ESD DCS	Rotation Check

14. Interlock Check Sheet

Interlock Check Sheet	
Project:	Page of
System :	P&ID’s covered:

Interlock.	Description	Interlock Input Checked		Stroke Test SDV		Alarm Tested
		Alarmed?	System trip initiated?	Field	DCS	

15. Emergency Shut Down Check Sheet

Emergency Shutdown Check Sheet	
Project:	Page of
System :	P&ID's covered:

ESD	Description	ESD Input Checked		Stroke Test SDV		Alarm Tested
		Alarmed?	System trip initiated?	Field	DCS	

16. DCS Sequence test procedure

DCS sequence test procedure				
Project:		Page of		
System :		P&ID's covered:		
Step	Action	Hold checked	Failure monitoring check	Sign

17. Relief Stream Check Sheets

Relief Stream Check Sheet	
Project:	P&ID's:
System :	Description:

Ensure that all Relief Streams have clear bore, prove via a flush, blow or pig procedure

Relief Stream	Description	Disc in Place?	Relief Valve in Position, exhaust line clear?	Relief Valve tested and tagged?	Relief Stream Labeled?

18. Critical Insulation Checks

Critical Insulation Check Sheet	
Project:	P&ID’s:
System :	Description:

Please check the following lines, the failure to have less than an initial coat of insulation, will prevent the sections of pipe work from being commissioned, or operated.

Line or Equipment Number	Description of cover required, and location	Insulation fitted?	Date and sign

19. Critical Gasket Checks

Critical Gasket Check Sheet	
Project:	P&ID's:
System :	Description:

Please check the following gaskets, which if improperly fitted, could result in either rework if they fail a leak test, or a release of the contain fluid/gas being commissioned on a service leak test

Line or Equipment Number	Description of cover required, and location	Witnessed fitting by:	Date and sign

20. Lubrication Check Sheet

Lubrication Schedule	
Project:	P&ID’s:
Systems : All	

Equipment Number	Description	Lubrication installed to correct specification	Date and sign

21. PSSR and Plant Check-out prior to introduction of Hazardous Chemicals

Pre-introductory checks defined in this section are based on the Hazard Study 4 system as developed by ICI in the 1960's. These guide words must be considered working in conjunction with the site or client based checking protocol.

Pre-startup Safety Review - Mandates that a safety review for new facilities and significantly modified work sites to confirm that the construction and equipment of a process are in accordance with design specifications; to assure that adequate safety, operating, maintenance and emergency procedures are in place; and to assure process operator training has been completed. Also, for new facilities, the PHA (Process Hazard Analysis) must be performed and recommendations resolved and implemented before start up. Modified facilities must meet management of change requirement.

The above is the guideline from OSHA. Most client operations will have a PSSR procedure in place; however reference should be made to the guidewords found in the document below and implemented to enhance the client PSSR document as required.

PSSR and Plant Check Sheet prior to introduction of Hazardous Chemicals			
Team Members: (Typical listed) Project Manager Mechanical Engineer Electrical Engineer Process Engineer Operations Manager SHE Advisor Commissioning Manager	**Project:**	**Author**	**Date**

No	Section	Guide word	Comments and action	Action On
1	**Visitors**	Procedure for management of visitors in place		
		Warning notices, indication of sign in location clearly identified		
		Required PPE available		
		Plant induction procedure in place		
2 2.1	**General Access** Stairs	Regular risers – especially top and bottom steps.		
		Depth of tread and slope.		
		Continuity of handrails.		
2.2	Fixed Ladders	Rails, guards, access and egress. Are they acceptable?		
		Are self close gates fitted where required		
2.3	Floor and tripping hazards	Unguarded openings in floors. Pipe slots in the floor sealed? Holes for pipes, etc., which require toe rings. Toe boards, handrails, security and continuity.		
		Uneven ground, pipe obstructions at low level		
		Areas susceptible to water pooling		
		Raised anchor bolts		
		Uncovered drains and gullies		
2.4	Headroom	Minimum headroom on walkways and normal operation areas acceptable. Check pipe work and steel bracing.		
2.5	Plant Exits	Are exits marked and adequately lit. Are safety barriers required because of vehicular movements		
2.6	Fire escape and toxic refuge	Are escape routes adequate? Are they marked and well lit Is the safe refuge defined, labeled and communicated		

No	Section	Guide word	Comments and action	Action On
3 3.1	**Access For Operation and Maintenance.** Valves and other operating controls	Are they out of reach – consider emergency and frequency of use? Consider moving, automating or providing access.		
3.2	Instruments points	Accessible for maintenance – consider frequency and urgency that will apply and move or provide access if necessary.		
3.3	Lubrication	If grease nipples are out of reach fit extension pipes.		
		Has all newly installed equipment had an initial charge of lubrication		
		Has a “top-up” routine been established		
3.4	Space for operation and or maintenance	Consider especially maintenance activities they usually require more space than plant operation.		
3.5	Lighting fittings	Can access for maintenance be improved?		
3.6	Road and rail tankers	Access to tanker with handrail protection if operator has to work on tank?		
4 4.1	**Guarding of Machines.** Exposed lengths of revolving shaft	Consider: pump glands, coupling guards, fans and conveyor drives. Are all exposed turning parts covered		
4.2	Belt drives	Are guards adequate – closed – fixed?		
4.3	Inspection openings	Do they give access to moving parts? Are they fixed? Should they be interlocked?		
4.4	Belt conveyors	Guarding of nips, idle rollers. Trip wires, inching operations for maintenance. Guarding for those underneath. Protection from splashing underneath.		
4.5	Charging openings in vessels	Contact with moving parts? Could someone fall in? Is an interlock needed? Should bars be fitted?		
5	**Stopping devices**	A stopping device, suitably located and identified should be adjacent to power driven machines and motors.		
6	**Fragile pipes and vessels**	Are glass or plastic devices protected from damage and labeled? Are protective screens required?		
7	**Hot surfaces**	Are people protected? Do stream traps drain to a safe location?		
8	**Pressure relief.**	Discharge to a safe location? Are they labeled?		

No	Section	Guide word	Comments and action	Action On
9	**Flammables**	Storage, labeling?		
10	**Lifting Beams**	Safe working load marked. Labeled? Registered?		
11	**Overhead, power operated cranes.**	Drivers access to cab and escape routes? Access for maintenance, lubrication? Are travel limit switches required?		
12	**Lighting**	Adequacy? Access for maintenance on plant? Roadways, paths? Emergency lighting operational and adequate?		
13 13.1	**Safety Equipment** Emergency Showers	Labeled, lighting, access, operation, testing, frost protection, bacterial effects		
13.2	Eyewash	Labeling, notices, lighting, cleanliness, auditing?		
13.3	Breathing apparatus	Labeling, notices, lighting, cleanliness, auditing?		
13.4	Other specialized protective equipment.			
13.5	Emergency assembly Point.	Signed communicated and tested? Adequate?		
13.6	Emergency alarm	Audible throughout plant with operations ongoing?		
13.7	Communication	How will this be done during emergencies?		
14	**Fire**	Fire fighting equipment – access – monitoring?		
		Fire alarms adequate labeled, visible?		
		Fire detection – suitable, appropriate?		
		Fire walls, sealing of ducts pipe runs.		
		Fire proofing of steelwork?		
		Access for emergency services?		
15	**Labeling**	Valves, pipelines, fragile equipment, filling connections? Electrical equipment, vessels, pumps, roadways etc.		
16	**Collision damage**	Safety barriers for vulnerable plant and pedestrians?		
17	**Control Room**	Instrumentation clearly labeled? Ventilation and lighting adequate? Have all ergonomic checks been completed? Any alarms and indicator panels correct?		
18	**DCS Control Systems**	All operator interfaces comply with policy and procedures? All ergonomic checks carried out?		

No	Section	Guide word	Comments and action	Action On
19	**Eye Hazards**	Zoned areas marked? Signs in place? PPE available?		
20	**Health**	Ventilation systems (including LEV) – testing – maintenance?		
21	**Safety Information**	Hazard data sheets, Risk assessments available on plant?		
22	**Housekeeping**	All redundant excess material removed from site. Roads/ paths finished to acceptable standard?		
23	**Sampling points**	Location, drainage, grounding? Analytical schedules and laboratory support services?		
24	**Environmental**	Monitoring and sample points set up? Management system in place? Are sample points accessible?		
25	**Outstanding HAZOP actions**	Outstanding actions from previous studies reviewed and signed off?		

PSSR and Plant Check Sheet prior to introduction of Hazardous Chemicals – Action Register

No	Section	Guide word	Comments and action	Action On	Completed by/Date

22. Documentation Requirements for Ongoing Maintenance Group

It is common that key documentation that appertains to new pipe work, vessels, civil installations etc. can not be available at the time of chemical introduction. The table below provides guidewords which should be discussed, at the earliest opportunity with the client maintenance and engineering groups to help insure all paperwork is in place.

Equipment Type	Item Number	Description	Documents required	Documents obtained
Pressure Vessels			Required vendor correspondence received	
			Mechanical data sheet	
			Design verification documents	
			Manufacturing Dossier	
			Vessel Drawings	
			Entity created and Spares list set up on Client spares system	
			Copy Order for vessel & associated equipment received	
			Other specifics…	
Non-Pressure Vessels			Vessel Drawings	
			Mechanical data sheet	
			Entity created and Spares list set up on Client spares system	
			Copy Order for vessel & associated equipment received	
			Manufacturing Dossier complete	
			Other specifics…	
General Pipe work			Quality Test Pack complete	
			Support details	
			Stress calculations	
			Isometrics	
Critical Pipe work			Quality Test Pack Complete	
			Design verification documents	
			Component Data sheets	
			Isometric drawings available	
			Support details available	
			Line labeled as per standard	
			Entity created and Spares list set up on Client spares system	
			Stress calculations	
			Surge analysis	

Equipment Type	Item Number	Description	Documents required	Documents obtained
Relief Streams			Rupture Disc register updated	
			Rupture Disc installation report compiled & complete	
			Relief valve data	
			Relief valve test certificate	
			Entity created and Spares list set up on client spares system	
Critical machines			Design verification documents	
			All drawing obtained	
			All component details received	
			Entity created and Spares list set up on Client spares system	
			Copy Order for equipment received	
			Mechanical data sheet completed	
			Equipment Dossier including Certificates of Conformance received	

23. Authority to Introduce Process Chemicals, check-sheet & Certificate

Authorization to Introduce Hazardous Chemicals		
Project:		System:
Author:	Date:	P&ID's covered:

No	Item	Authorization	Signature	Date
1	Vessel or equipment internally inspected immediately prior to closure and is free of debris.	Commissioning Engineer		
2	Witness of any critical joints by the Plant Engineer.	Plant Engineer		
3	Leak test satisfactorily completed as per schedule.	Commissioning Engineer		
4	All Instrument/Electrical, alarm and interlock checks carried out and fault corrected.	Commissioning C/E/I Engineer		
5	Shut Down Tests completed and faults corrected. All valves associated with impulse lines are aligned correctly.	C/E/I & Commissioning Engineer		
6	Valve Alignment Checks carried out. (Including relief stream interlock alignments).	Commissioning Engineer		
7	Locked Open/Closed Valves in correct positions and clearly marked. Security of locking devices checked and satisfactory.	Commissioning Engineer		
8	Equipment dried out/purged as necessary.	Commissioning Engineer		
9	Critical Insulation completed as per schedule.	Commissioning Engineer		
10	All necessary Punch List (excluding Reservation List) work completed.	Commissioning Engineer		
11	All Blinds/blanks in correct positions. (Refer to Isolation Register).	Commissioning Engineer		
12	Commissioning procedures complete (e.g. stroke check valves/look for abnormal readings etc.).	Commissioning Engineer		
13	Interlock defeat register signed off.	Commissioning Engineer		
14	MOC procedure checked to ensure that installation is as per Design.	Commissioning Engineer		
15	All safety equipment in position.	Commissioning Engineer		
16	Rotating equipment checks carried out.	Mechanical Commissioning Engineer		
17	All Permits to Work have been signed off.	Commissioning Engineer		

No	Item	Authorization	Signature	Date
18	All staging in the vicinity of hot surfaces has been dismantled or otherwise protected.	Commissioning Engineer		
19	Radioactive sources installed as necessary.	Commissioning Engineer		
20	Handover reservations listed.	Commissioning Engineer		
21	Statutory paperwork complete:	Plant Mechanical & Instrument Engineer		
22	Housekeeping satisfactory.	Commissioning Engineer		
23	All HAZOP actions complete.	Commissioning Engineer		

The above checklist for introducing chemicals has been completed. Yes / No

All shutdown, de-contamination and re-commissioning paperwork has been signed off.

System Commissioning Engineer: Date

We are satisfied that the system pre commissioning work has been completed and the general housekeeping standards and safety in the area are appropriate to allow the introduction of process fluids.

The agreed Date/Time for introduction of process fluids is :

Commissioning Manager: Date:

Responsible E/I Engineer: Date:

Responsible Mechanical Engineer: Date:

Plant Manager: Date:

24. Commissioning Procedures

Commissioning procedures, written during the preparation phase of the project are the documents which in great detail, set out how the plant will be commissioned and started up.

It is common for the commissioning procedures to be written first, the SOP's is developed from these documents.

A detailed commissioning procedure should be compiled for each major activity that the plant will undergo through the start-up. These documents are not check sheets, they give a detailed descriptive of how the plant is made ready for normal operation.

Information to compose these procedures is found within, P&ID's, PFD's, process descriptions, instrument data sheets, equipment data sheets, control narratives, interlock and emergency shutdown descriptions, vendor installation and operating manuals and most importantly talking with the process design teams.

A good commissioning procedure will detail the step, the method of performing the step, any detail any relevant comments and observations.

Common procedures could be:

- How do we get the chemicals in?
- How to slowly heat up, cool down, vent and control pressure and non-condensable gases,
- Introduce and control level
- Establish and control flow
- Manage exotherms and endotherms
- Condition a catalyst
- Set-up a distillation column for profile – diagrams on temperature/pressure curve can be utilized
- Set-up and control of a scrubbing tower
- Actually introduce alarms conditions to test operability
- Introduce interlock conditions to test
- Describe and manage any DCS controlled sequences
- Normal and emergency shutdown – where applicable and possible
- Validation criteria and sampling regime

Commissioning Procedure	

TITLE:	Page 1 of

Project:	Document Title:
System :	P&ID's covered:
Line numbers:	Vessel Numbers:
Author:	Date:

STEP	ACTION	METHOD	Comments	Signed Date

Procedure to ……. has been completed.

Signed by:	Date:
Comments	
Procedure Validated by:	Sign/Date

25. Standard Operating Procedures – SOP's

It is not uncommon for the commissioning team to be requested to draft the initial SOP's as most of the key information detailed within will be written during the composition of the commissioning procedures.

Below are the OSHA (USA) guidelines for the contents of an SOP.

The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements.

Steps for each operating phase:

Initial startup;

Normal operations;

Temporary operations;

Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner.

Emergency Operations;

Normal shutdown;

Startup following a turnaround, or after an emergency shutdown.

Operating limits:

Consequences of deviation;

Steps required to correct or avoid deviation.

Safety and health considerations:

Properties of, and hazards presented by, the chemicals used in the process;

Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment;

Control measures to be taken if physical contact or airborne exposure occurs;

Quality control for raw materials and control of hazardous chemical inventory levels; and,

Any special or unique hazards.

26. Commissioning to Operations Handover Certificate

COMMISSIONING TO OPERATIONS HANDOVER CERTIFICATE	
Project Title:	System Description :

No	Item	Organized by	Signature	Date
1	Project Data or Turnover Book prepared and available to Handover			
2	All Project P&ID's available and set in the Control Room			
3	Commissioning Procedures all completed, and documentation available			
4	Reservation Check-list completed			
5	All HAZOP Actions and or MOC completed such that it is acceptable			
6	All Loop Sheets are handed over to maintenance personnel			
7	Initial draft of SOP's available			

The acceptance criteria for this Project, as agreed between the Project Manager, Operations Manager and Commissioning Manager are as set out below.

No	Description	Comments and completed by

COMMISSIONING TO PLANT HANDOVER CERTIFICATE	

The above checklist for handover to plant has been completed.

I am satisfied that the system work has been commissioned and it is safe to allow continued operation.

Commissioning Manager Print Date

Signature

Plant/Operating Manager Print Date

Signature

Reservations to Handover

Item No.	Description of Outstanding Work	Item ID	Action Req. From	Priority