

**BES CONTROL SYSTEMS STANDARDS
DELIVERABLE MATRIX**

DESCRIPTION OF DELIVERABLES	DESIGN PHASE				CONSTRUCTION PHASE			
	UP TO 30%	30-50%	50-90%	90-100%	UP TO 75%	75-90%	90-100%	Start up
PROCESS NARRATIVES Vol.1 sect. 2.1.2.3	●Submit initial draft describing project operation.	●Submit second draft for review.	●Submit final process narratives. ●Provide loop descriptions.					
P&ID'S Vol.1 sect 2.1.2.1 Vol.2 sect 16010 4.0.0	●Submit initial draft.	●Assign loop #.	●Final P&ID's.				●As-built P&ID'S	
Digital System Basic Block Diagram Vol.1 sect 2.1.2.2	●Submit initial draft showing PLC's, supervisory control and their interconnection.	●Identify Video, Audio, and LAN systems.	●Final Block diagram.					
Equipment and Loop Numbers Vol.1 sect. 2.1.2.17	●Apply for equipment and loop numbers.	●Equipment and Loop numbers assigned.						
Electrical Equipment Space Vol.1 sect. 2.1.2.*14 2.1.2.*15		●Apply for reservation of MCC space.	●Finalize MCC space requirements, load capacities, and Coordination.					
Electrical Drawings Vol.1 sect. 2.1.1(note) Vol.1 sect. 2.1.2.4 2.1.2.16 Vol. 2 sect. 16010 4.0.0 4.3	●Supply original dwg's to planner(s) ●Apply for project prefix characters.		●Control panel wiring diagrams. ●Conduit and Cable schedules. ●Interconnecting wiring diagrams. ●Conceptual electrical control ladder schematics.		●Final electrical ladder schematics ●Provide control panel detailed layout	●Control panel structural details ●Control panel wiring changes	●Red line as-built dwgs.	
Instrument Drawings Vol.1 sect. 2.1.2.6 2.1.2.12 2.1.2.15 Vol. 2 sect. 16010 4.3 Vol. 2 sect. 17100 4.2.1			●Instrumentation list and installation details. ●I/O list.			●Detailed Loop Wiring diagrams. ●Instrument data sheets	●Red line as-built dwgs.	
Software PLC Vol. 6 Scada note APT does the reviews		●iFIX general non linked screen layout. ●PLC flow chart and /or English language description 75% complete	●Final review PLC flow chart and /or English language description.		●First major PLC sys prog. Version review @ 50% construction. All others at 70%.	●iFIX all linked screen review @ 80% construction.	●All PLC programming and iFIX screens complete. Earlier if testing required. ●Provide all final Documentation.	
O&M Manuals Vol. 2 sect. 16010							●Provide O&M manuals.	
Specifications Vol.1.sect. 2.1.2.19		●Provide preliminary specifications.	●Final specifications including contractor's work scope and responsibility.					