











Develop system requirements to satisfy <b>Product</b> and Process Requirements Example Trace Matrix									
Process Stage	Process Step	CPP	NOR	PAR	Ref.	System Requirement	Ref.		
Product X – Solution Prep.	Mixing	Flow Rate	40 – 60 lpm	35 – 70 lpm	CPD - X	The system must provide a	URS		
Product Y – Solution Prep.	Mixing	Flow Rate	55 - 65 lpm	55 - 80 lpm	CPD - Y	mixing.			
Boston Area Chapter Brown of the Capad									















Custom Dominum and	Ref.	Critical Aspects					
System Requirement		Number	Description	Specification	Ref.		
	URS	CA-001	Flow Control Loop F-14	Controls flow rate in skid from 10- 100 +/- 0.05 lpm	P&ID		
		CA-001a	Speed controller/VFD SC-14	1 phase, 208V, 50/60Hz Range 1-120 +/- 0.01 Hz Over/Under voltage protected	P&ID, data sheet		
The system must provide		CA-001b	VFD Control Module SC-14-CM	Provides output logic, display, alarming, historian functions to control VFD based on PID input	P&ID, Configuration Spec SC-14- CM		
a flow rate of 35 – 80 lpm luring mixing.		CA-001c	PID Control Module FIC-14-CM	Provides output, logic, display, alarming, historian functions based on input from FE/FIT-14	P&ID, Configuration Spec FIC-14- CM		
		CA-001d	Flow instrument loop FE/FIT-14	Range 0-150 lpm Accuracy 0.25% of full range	P&ID, Instrument data sheet		
		CA-001e	Pump P-100-14	Max Flow: 140 lpm Max Pressure: 4.3 bar Single Use pump head	Data sheet		









Verification: Example verification model								
	Critica	Varification Mathod						
Number	Description	Specification	Ref.	vernication Method				
CA-001	Flow Control Loop E-14	Controls flow rate in skid from	P&ID	Functionally test control loop over entire specified range in CTP				
		10-100 +/- 0.05 lpm		Challenge control loop over P/PR range in IOQ				
CA-001a	Speed controller/VFD SC-14	1 phase, 208V, 50/60Hz Range 1-120 +/- 0.01 Hz	P&ID, data	Verify proper installation against drawings, verify make, model, record serial number in CTP				
		Over/Under voltage protected	sneet	Verify configuration and functionally test in CTP				
CA-001b	VFD Control Module SC-14-CM	Provides output logic, display, alarming, historian functions to control VFD based on PID input	P&ID, Configuration Spec SC-14- CM	Test to ensure all module components - logic, displays, historian, alarms, etc. are functioning individually and together during DT or CTP				
CA-001c	PID Control Module FIC-14-CM	Provides output, logic, display, alarming, historian functions based on input from FE/FIT-14	P&ID, Configuration Spec FIC-14- CM	Test to ensure all module components - logic, displays, historian, alarms, etc. are functioning individually and together during DT or CTP				
CA-001d		Rongo 0 150 lpm	P&ID, Instrument data sheet	Verify proper installation against drawings, verify make, model, record serial number in CTP				
	Flow instrument loop FE/FIT-14	Accuracy 0.25% of full range		Verify configuration of associated control modules in CTP				
				Verify instrument is in CMMS and has current calibration label in CTP				
CA-001e	Pump P-100-14	Max Flow: 140 lpm Max Pressure: 4.3 bar	Data sheet	Verify proper installation against drawings, verify make, model, record serial number in CTP				
		Single Use pump head		Functionally test in CTP				

















