										CO	NTROL	PHILO	SOPH	FOR	PRETR	EATMEI	NT SKI	D								
CLIENT :																										
CONSULTANT																										
PROJECT :		PURIFIED WATER G	ENERATION	SYSTEM -	PRETR	EATMENT	(MGF & SOF	TENER)																		
DOC.NO :																										
REF.DWG :																										
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instru- ment)	Full Scale Range (Of HMI)	Unit	Resoluti ons	-	199.1AV- 02	101.1DP- 01	103.1P- 01/02	104.1AV- 01	104.1AV- 02	104.1AV- 03	- 104.1AV- 04	104.1AV- 05	109.1AV- 03	109.1AV- 04	109.1AV- 07	109.1AV- 06	- 109.1A -05	/ 109.1AV -01	/ 109.1AV -02	/ Fault lamp	Hooter	Alarm and Message	
							Water Demand Signal	Raw Water Inlet Valve	NaOCl Dosing Pump	MGF Feed Pump	MGF Service Inlet Valve	MGF Service Outlet Valve	MGF Backwas h Inlet Valve	MGF Backwas h Outlet Valve	MGF Rinse Outlet Valve	Soft Service Inlet	Soft Service Outlet	Soft Backwash Inlet	Soft Backwas h Outlet	Slow Rinse Valve	Power Water Inlet	Brine Injectio n Valve				
Pretreatment HMI. If user ha	skids will have Two o as selected the Manu	operating modes. The al mode, then Auto	hese are Ma mode selec	nual Mode	e and Au on will	uto Mode. become d	These mode isable and w	es are selec ⁄ill become	table from enable on	n HMI and a ly when Ma	it a time on Inual mode	ly one mo button is (de can be de-selecte	executed. ed. If user	To select has select	the Manua ed the Auto	l mode, u o mode, ti	ser has to hen Manua	select the l mode sel	e Manual lection b	mode but utton will	ton from become	the HMI. disable a	To select nd will be	the Auto mode, come enable or	, use nly v
 When MGF When Softe There shall There shall During Soft MGF Feed Touring any During Swith 	is performing its Ba ener is performing it I be Timer reset but I be Timer reset but ener is performing pump shall be selec Auto Cycle, Auto v tch over of Existing	ckwash/Rinse cycle ts Regeneration / R ton for MGF on the ton for softener or its Regeneration cy table from HMI. W alve should open f Cycle to New Cycle	e, system w inse cycle, e HMI. By pro- n the HMI. E ycle and at ien any one irst and the e, System w	vill close f MGF shal ressing th By pressin the same e of the p en after d vill first O	the Sofi is butto is butto g this b time if ump is elay of pen the	tener resp in in servi on system button sys f in case A running, 10 sec. r e New Cys	bective cycl ice mode. will reset t tem will reset t AGF service pump selec espective p cle Valve an	le valves an the MGF ress set the resp cycle is co tion button ump will st ad then Clos	nd will hol spective cip pective tir mpleted, shall rem art. se the Exis	d the respe ycles and v ner and wi then MGF v ain disable sting Cycle	ective cycl will go back Il go back will remair e. Valves and	e timer. k to MGF s to Softene n in its ser d then aft	ervice cy er service vice cycle er delay c	cle. Acces cycle. Acc e and Softe of 10 Sec.	s level to cess level enere will Start the p	this buttor to this but first comp respective	n shall be ton shall lete its re Pump.	to Manage be to Man egenreatio	er and Adı ager and J n cycle. (ministrat Administ Once Sof	or level o rator levo tener reg	only. el only eneration	n cycle g	ets compl	eted, then only	y MC
	1		T	T	1	T	I	T		1	1	T	MAN	NUAL MOD	E	T	1	T	1	T	1		1			
AFR-PS-L	At Air Line	Low	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Ţ	ſ	"Air Pressure Low"	In Fil ini Th he fie pa tu
Emergency Switch	On Control Panel	Emergency Switch Pressed	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	ſ	ſ	"Emergency Switch Pressed"	In bu ala th fro Or pa tu
Power	Of Control Panel	Power Fails	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	х	x	x	x	NA	In sy: Wi sw pr sta
	1	1	1	1	1	1	1	1	1		1	1	AL	JTO MODE	1	1	1	1	1	1		1	1			_
AFR-PS-L	At Air Line	Low	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	ſ	ſ	"Air Pressure Low"	In Fil ini Th he wi
Emergency Switch	On Control Panel	Emergency Switch Pressed	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	J	Ţ	"Emergency Switch Pressed"	In bu tu ala th

DESCRIPTION

er has to select the Auto mode button from the /hen Auto mode button is de-selected.

GF will perform its Backwash/Rinse cycle.

case if the Air pressure switch installed at Air lter Regulator unit becomes low, then system ill stop or turn Off all the field devices and will itiate an alarm (Fault Lamp & Hooter). enafter when the Air Pressure switch becomes ealthy, then the system will not switch On the eld devices. User has to again press the articular field devices icons in order to start or rrn it On

case if the user presses the Emergency switch utton from the panel, then system will stop or rm Off all the field devices and will initiate an arm (Fault Lamp & Hooter). Thenafter when we user releases the Emergency switch button om the panel, then the system will not switch on the field devices. User has to again press the articular field devices icons in order to start or rm it On

case if there is a power failure then the stem will stop or turn Off all the field devices. hen the Power resumes back, system will not vitch On the field devices. User has to again ress the particular field device icon in order to art or turn it On

case if the Air pressure switch installed at Air lter regulator unit becomes low, then system ill stop or turn Off all the field devices and will itiate an alarm (Fault Lamp & Hooter). henafter when the Air Pressure switch becomes ealthy, then the system after a delay of 30 secs ill restart automatically.

In case if the user presses the Emergency switch button from the panel, then system will stop or turn Off all the field devices and will initiate an alarm (Fault Lamp & Hooter). Thenafter when the user releases the Emergency switch button from the panel, then the system after a delay of 30 secs will restart automatically

										CO		PHILO	SOPHY	FOR	PRETR	EATMEI	NT SKI	D								
CLIENT :																										
CONSULTANT																										
PROJECT :		PURIFIED WATER O	GENERATION	SYSTEM -	PRETR	EATMENT	(MGF & SOF	TENER)																		
DOC.NO :																										
REF.DWG :			-	-								-														
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instru- ment)	Full Scale Range (Of HMI)	Unit	Resoluti ons	-	199.1AV- 02	101.1DP- 01	103.1P- 01/02	104.1AV- 01	104.1AV- 02	104.1AV- 03	104.1AV- 04	104.1AV- 05	109.1AV- 03	109.1AV- 04	109.1AV- 07	109.1AV- 06	109.1AV -05	/ 109.1AV -01	/ 109.1AV -02	Fault lamp	Hooter	Alarm and Message	
							Water Demand Signal	Raw Water Inlet Valve	NaOCl Dosing Pump	MGF Feed Pump	MGF Service Inlet Valve	MGF Service Outlet Valve	MGF Backwas h Inlet Valve	MGF Backwas h Outlet Valve	MGF Rinse Outlet Valve	Soft Service Inlet	Soft Service Outlet	Soft Backwash Inlet	Soft Backwas h Outlet	Slow Rinse Valve	Power Water Inlet	Brine Injectio n Valve				
Power	Of Control Panel	Power Fails	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	NA	In c syst Whe afte
199.1LS-01	Level switch	High-High	NA	NA	NA	NA	x	x	x	ſ	ſ	ſ	x	x	x	ſ	Ţ	x	x	x	x	x	x	x	Only Text "199.1LS-01 High-High"	Higl Raw inle init

DESCRIPTION
case if there is a power failure then the stem will stop or turn Off all the field devices. hen the Power resumes back, hen the system ter a delay of 60 secs will restart automatically.
igh-high level at Raw water tank will trip the aw water Demand signal, Close the Raw water let Valve , trip the NaOCl dosing pump and will itiate an alarm (Only Text)

CLIENT :

CONSULTANT

PURIFIED WATER GENERATION SYSTEM - PRETREATMENT (MGF & SOFTENER)

DOC.NO :

PROJECT :

REF.DWG :																										
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instru- ment)	Full Scale Range (Of HMI)	Unit	Resoluti ons	-	199.1AV- 02	101.1DP- 01	103.1P- 01/02	104.1AV- 01	104.1AV- 02	104.1AV- 03	104.1AV- 04	104.1AV- 05	109.1AV- 03	109.1AV- 04	109.1AV- 07	109.1AV- 06	109.1AV -05	/ 109.1AV -01	109.1AV -02	Fault lamp	Hooter	Alarm and Message	
							Water Demand Signal	Raw Water Inlet Valve	NaOCl Dosing Pump	MGF Feed Pump	MGF Service Inlet Valve	MGF Service Outlet Valve	MGF Backwas h Inlet Valve	MGF Backwas h Outlet Valve	MGF Rinse Outlet Valve	Soft Service Inlet	Soft Service Outlet	Soft Backwash Inlet	Soft Backwas h Outlet	Slow Rinse Valve	Power Water Inlet	Brine Injectio n Valve				
199.1LS-01	Level switch	High	NA	NA	NA	NA	Ţ	ſ	Ţ	Ţ	Ţ	Ţ	x	x	x	ſ	ſ	x	x	x	x	x	x	x	NA	Hig wa Va acl wa
199.1LS-01	Level switch	Low-Low	NA	NA	NA	NA	ſ	ſ	ſ	x	x	x	x	x	x	x	x	x	x	x	x	x	ſ	ſ	"199.1LS-01 Low-Low"	Lo MC wil So res wil
199.1LS-01	Level switch	Low	NA	NA	NA	NA	ſ	ſ	ſ	ſ	ſ	ſ	x	x	x	ſ	ſ	x	x	x	x	x	x	x	NA	Lo fee val (Fr cy tin ala
199.1FS-01	Raw water inlet Flow Switch	Low	NA	NA	NA	NA	ſ	ſ	x	ſ	ſ	ſ	x	x	x	ſ	ſ	x	x	x	x	x	ſ	ſ	"199.1FS-01 Low"	Wh cho flo sys ini
199.1FS-01	Raw water inlet Flow Switch	Healthy	NA	NA	NA	NA	ſ	ſ	ſ	ſ	ſ	ſ	x	x	x	ſ	ſ	x	x	x	x	x	x	x	NA	Wi flo the pu hiន្
101.1LS-01	Level Switch (of NaOCL dosing tank)	Low	NA	NA	NA	NA	Ţ	ſ	ſ	ſ	ſ	ſ	x	x	x	ſ	ſ	x	x	x	x	x	ſ	x	"101.1LS-01 Low"	Wh sys Ho Op lev the
NA	MGF Service Cycle	MGF Service Cycle Timer Started / MGF Rinse Cycle Timer Completed	NA	0 to 9999	Minut e	####	ſ	ſ	ſ	ſ	ſ	ſ	x	x	x	ſ	ſ	x	x	x	x	x	x	x	Only HMI Indication "MGF Service Cycle"	Wf sys the lev pu pe sta tin rar Se
NA	MGF Backwash Cycle	MGF Service Cycle timer completed	NA	0 to 999	Minut e	###.#	ſ	I	ſ	ſ	x	x	ſ	ſ	x	x	x	x	x	x	x	x	x	x	Only HMI Indication "MGF Backwash Cycle"	As sys set val set 99 ^o inc

DESCRIPTION

gh level at Raw water tank will start the Raw ater Demand signal, Open Raw Water Inlet Ilve, start the NaOCl dosing pump and will knowldge the alarm of High-High level at Raw ater tank

w-Low level at Raw water tank, will trip the GF Feed pump, close the MGF auto valve and ill hold the respective cycle timer, close the oftenere auto valves and will hold the respective cycle timer, During this period system ill initiate an alarm (Fault Lamp & Hooter)

w level at Raw water tank will start the MGF ed pumps, open the MGF respective cycle lves and will start the respective cycle timer rom Held Time), open the softener respective cle valves and will start the respective cycle ner (From Held Time), and will acknowldge the arm of Low-low level at Raw water tank.

nen Raw water inlet signal is on, system will eck for flow at raw water inlet line, If in case we becomes low (Remains low for 10 secs) stem will trip the NaOCl dosing pump and will tiate an alarm (Fault Lamp & Hooter)

hen Raw water inlet signal is on and in case the ow at raw water inlet line becomes healthy, en only system will start the NaOCl dosing Imp (Provided level at Raw water tank is not gh-high level) and will acknowldge the alarm of w flow at Raw water inlet line

hen level at NaOCL dosing tank becomes low, stem will initiate an alarm (Fault Lamp & poter)

verator has to fill the tank manually. Once tank vel becomes healthy, system will acknowldge e alarm of Low level at NaOCL dosing tank.

henever the system is started in Auto mode, stem will start the Raw water inlet signal, start e NaOCl dosing pump (Provided Raw water tank vel is not Low Low level), start MGF feed mp, start MGF service cycle for settable time riod by opening respective valves. During this riod system will give an indication on HMI atting "MGF Service Cycle". MGF service cycle ner shall be settable from the HMI having the nge from 0 min to 9999 min. During this period lected MGF feed pump shall become ON.

As soon as MGF Service cycle timer is completed, system will start the MGF backwash cycle for settable time period by opening respective valves. MGF Backwash cycle timer shall be settable from the HMI having range from 0 min to 999 min. During this period, system will give an indication on HMI stating "MGF Backwash Cycle". During this period Selected MGF feed pump shall become ON.

										СО		PHILO	SOPHY	' FOR	PRETR	EATMEI	NT SKII	D								
CLIENT :																										
CONSULTANT																										
PROJECT :		PURIFIED WATER G	GENERATION	I SYSTEM -	- PRETR	EATMENT	(MGF & SOF	TENER)																		
DOC.NO :																										
REF.DWG:																										
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instru- ment)	Full Scale Range (Of HMI)	Unit	Resoluti ons	-	199.1AV- 02	101.1DP- 01	103.1P- 01/02	104.1AV- 01	104.1AV- 02	104.1AV- 03	104.1AV- 04	104.1AV- 05	109.1AV- 03	109.1AV- 04	109.1AV- 07	109.1AV- 06	109.1AV -05	109.1AV -01	109.1AV -02	Fault lamp	Hooter	Alarm and Message	
							Water Demand Signal	Raw Water Inlet Valve	NaOCl Dosing Pump	MGF Feed Pump	MGF Service Inlet Valve	MGF Service Outlet Valve	MGF Backwas h Inlet Valve	MGF Backwas h Outlet Valve	MGF Rinse Outlet Valve	Soft Service Inlet	Soft Service Outlet	Soft Backwash Inlet	Soft Backwas h Outlet	Slow Rinse Valve	Power Water Inlet	Brine Injectio n Valve				
NA	MGF Rinse Cycle	MGF Backwash cycle timer is completed	NA	0 to 999	Minut e	###.#	ſ	Į	ſ	ſ	ſ	x	x	x	ſ	x	x	x	x	x	x	x	x	x	Only HMI Indication "MGF Rinse Cycle"	As s con for val froi mir ind Dur bec
NA	MGF Service Cycle, Softener Service Cycle	Softenere is in service mode (Provided MGF is in Service Mode)	NA	0 to 9999	Minut e	####	ſ	Į	ſ	ſ	ſ	ſ	x	x	x	Į	ſ	x	x	x	x	x	x	x	Only HMI Indication "MGF Service Cycle" "Softener Service cycle	Init Sof froi Sys thi: " per

DESCRIPTION

s soon as MGF Backwash cycle timer is ompleted, system will start the MGF Rinse cycle or settable time period by opening respective alves. MGF Rinse cycle timer shall be settable rom the HMI having range from 0 min to 999 nin. During this period, system will give an idication on HMI stating "MGF Rinse cycle". uring this period Selected MGF feed pump shall ecome ON.

nitially softener shall be in Service Mode. oftener is based on time which shall be settable rom HMI having range from 0 min to 9999 min. ystem will give an indication on the HMI. During his period MGF shall in Service mode. During this eriod Selected MGF feed pump shall become ON. CLIENT :

CONSULTANT

PROJECT : PURIFIED WATER GENERATION SYSTEM - PRETREATMENT (MGF & SOFTENER)

DOC.NO :

REF.DWG :			-																							
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instru- ment)	Full Scale Range (Of HMI)	Unit	Resoluti ons	-	199.1AV- 02	101.1DP- 01	103.1P- 01/02	104.1AV- 01	104.1AV- 02	104.1AV- 03	- 104.1AV- 04	- 104.1AV- 05	109.1AV- 03	109.1AV- 04	109.1AV- 07	109.1AV- 06	109.1AV -05	109.1AV -01	109.1AV -02	Fault lamp	Hooter	Alarm and Message	
							Water Demand Signal	Raw Water Inlet Valve	NaOCl Dosing Pump	MGF Feed Pump	MGF Service Inlet Valve	MGF Service Outlet Valve	MGF Backwas h Inlet Valve	MGF Backwas h Outlet Valve	MGF Rinse Outlet Valve	Soft Service Inlet	Soft Service Outlet	Soft Backwash Inlet	Soft Backwas h Outlet	Slow Rinse Valve	Power Water Inlet	Brine Injectio n Valve				
NA	MGF Service Cycle, Softenere Backwash Cycle	If Softener Service cycle is completed (Provided MGF is in Service mode)	NA	0 to 999	Minut e	###.#	ſ	ſ	ſ	Į	ſ	ſ	x	x	x	x	x	ſ	ſ	x	x	x	x	x	Only HMI Indication "MGF Service Cycle" "Softener Backwash Cycle"	As cor cyc alc cyc fro Sel
NA	MGF Service Cycle, Softenere Brine Injection Cycle	Softener Backwash cycle is completed (Provided MGF is in Service mode)	NA	0 to 999	Minut e	###.#	ſ	ſ	ſ	ſ	ſ	ſ	x	x	x	x	x	x	x	ſ	ſ	ſ	x	x	Only HMI Indication "MGF Service Cycle" "Softener Brine Injection Cycle"	As co Inj op fee tin ha wi Se
NA	MGF Service Cycle and Softenere Slow Rinse Cycle	If Softener Brine Injection cycle is completed (Provided MGF is in Service mode)	NA	0 to 999	Minut	###.#	Į	ſ	ſ	ſ	ſ	Į	x	x	x	x	x	x	x	ſ	ſ	x	x	x	Only HMI Indication "MGF Service Cycle" "Softener Slow Rinse Cycle"	As con cyc alc cyc fro Sel
NA	MGF Service Cycle, Softenere Fast Rinse Cycle	If Softener Slow Rinse cycle is completed (Provided MGF is in Service mode)	NA	0 to 999	Minut e	###.#	ſ	ſ	ſ	ſ	ſ	ſ	x	x	x	ſ	x	x	x	ſ	x	x	x	x	Only HMI Indication "MGF Service Cycle" "Softener Fast Rinse Cycle"	As cor cyc res alc cyc fro inc Sel
NA	MGF Service Cycle, Brine Filling Cycle	If Softener Fast Rinse cycle is completed (Provided MGF is in Service mode)	NA	0 to 999	Minut e	###.#	ſ	ſ	1	ſ	1	ſ	x	x	x	ſ	ſ	x	x	x	x	ſ	x	x	Only HMI Indication "MGF Service Cycle" "Brine Filling Cycle"	As coi for Val MG be min the sha Du be
199.1LS-02	Level Switch (Soft water Storage Tank)	High-High	NA	NA	NA	NA	Į	Į	Ţ	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Only Text "199.1LS-02 High-High"	Hig MG wil Sof res (Or

DESCRIPTION

soon as Softener Servic cycle timer is mpleted, System will start Softener Backwash cle for settable time period by opening its spective Valves by starting MGF feed pump ong with MGF Service cycle. The timer for this cle shall be settable from HMI having the range om 0 min to 999 min. System will give dication on the HMI. During this period lected MGF feed pump shall become ON.

soon as Softener Backwash cycle timer is mpleted, System will start Softener Brine jection cycle for settable time period by ening its respective Valves by starting MGF ed pump along with MGF Service cycle. The ner for this cycle shall be settable from HMI ving the range from 0 min to 999 min. System Il give indication on the HMI. During this period lected MGF feed pump shall become ON.

soon as Softener Brine Injection cycle timer is mpleted, System will start Softener Slow Rinse cle for settable time period by opening its spective Valves by starting MGF feed pump ong with MGF Service cycle. The timer for this cle shall be settable from HMI having the range om 0 min to 999 min. System will give dication on the HMI. During this period lected MGF feed pump shall become ON.

soon as Softener Slow Rinse cycle timer is mpleted, System will start Softener Fast Rinse cle for settable time period by opening its spective Valves by starting MGF feed pump ong with MGF Service cycle. The timer for this cle shall be settable from HMI having the range om 0 min to 999 min. System will give dication on the HMI. During this period lected MGF feed pump shall become ON.

soon as Softener Fast Rinse cycle timer is mpleted, System will start Brine Filling cycle r settable time period by opening its respective lves by starting MGF feed pump along with 3F Service cycle. The timer for this cycle shall settable from HMI having the range from 0 n to 999 min. System will give indication on e HMI. During this period, selectable pump all remain on and MGF shall in Service mode. ring this period Selected MGF feed pump shall come ON.

gh-high level at Soft water tank, will trip the GF Feed pump, close the MGF auto valve and Il hold the respective cycle timer, close the ftenere auto valves and will hold the spective cycle timer, and will initiate an alarm nly Text)

										СО	NTROL	PHILO	SOPHY	' FOR	PRETRI	EATMEI	NT SKI	D								
CLIENT :																										
CONSULTANT																										
PROJECT :		PURIFIED WATER	GENERATION	N SYSTEM -	- PRETR	EATMENT	(MGF & SOF	TENER)																		
DOC.NO :																										
REF.DWG:																										
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instru- ment)	Full Scale Range (Of HMI)	Unit	Resoluti ons	-	199.1AV- 02	101.1DP- 01	103.1P- 01/02	104.1AV- 01	104.1AV- 02	104.1AV- 03	104.1AV- 04	104.1AV- 05	109.1AV- 03	109.1AV- 04	109.1AV- 07	109.1AV- 06	109.1AV -05	/ 109.1AV -01	109.1AV -02	Fault lamp	Hooter	Alarm and Message	
							Water Demand Signal	Raw Water Inlet Valve	NaOCl Dosing Pump	MGF Feed Pump	MGF Service Inlet Valve	MGF Service Outlet Valve	MGF Backwas h Inlet Valve	MGF Backwas h Outlet Valve	MGF Rinse Outlet Valve	Soft Service Inlet	Soft Service Outlet	Soft Backwash Inlet	Soft Backwas h Outlet	Slow Rinse Valve	Power Water Inlet	Brine Injectio n Valve				
199.1LS-02	Level Switch (Soft water Storage Tank)	High	NA	NA	NA	NA	ſ	ſ	ſ	ſ	ſ	ſ	x	x	x	ſ	ſ	x	x	x	x	x	x	x	NA	Hig feed valv (Fro cycl time alar tanl
	T					I							1						I							
R0								Clier	nt Appr	oval																
Rev. no.		Date						Re	leased f	for					Prepa	red By					Check	ed By	,			

DESCRIPTION

igh level at Soft water tank will start the MGF eed pumps, open the MGF respective cycle alves and will start the respective cycle timer From Held Time), open the softener respective cycle valves and will start the respective cycle mer (From Held Time) and will acknowldge the larm of High-high level at Soft water storage ank.

Approved By

	CLIENT :																			
	CONSULTANT:																			
	PROJECT :	PURIFIED WATER GENE	RATION SYSTEM - PRETI	REATMENT (UF)																
	DOC.NO :																			
	REF.DWG :																			
Tag	Instrument/Equipm	Condition	Full Scale Range (Of	Full Scale Range	Unit	Resoluti	199.1A	103.2P-	110.1AV-	110.1AV-	110.1AV-	110.1P-01	103.3P-	199.2A	199.2A	199.2A	Fault	Hooter	Alarm and	DISCRIPTION
	ent/Type of Cycle		Instrument)	(Of HMI)		ons	V-01	01/ 02	02	04	03		01/02	V-01	V-02	V-03	lamp		Message	
							Utility	UF Feed	UF	UF	UF Top	UF Back	RO Feed	Boiler	Chiller	Chiller				
							Inlet	Pump	Bottom	Permeate	Drain Valve	flush Pump	Pump	Tank	Tank	Tank				
							Valve		Drain	Valve				Inlet	Inlet	Inlet				
									Valve					Valve	Valve	Valve				

UF System will have Two operating modes. These are Manual Mode and Auto Mode. These modes are selectable from HMI and at a time only one mode can be executed. To select the Manual mode, user has to select the Auto mode, user has to select the Auto mode button from the HMI. To select the Auto mode, user has to select the Auto mode and will become enable only when Manual mode button is de-selected. If user has selected the Auto mode selection button will become enable only when Manual mode button is de-selected. If user has selected the Auto mode, then Manual mode selection button will become enable only when Auto mode button is de-selected.

Special Conditions:

1) If in case UF service cycle timer is completed, system will check for high level at UF permeate tank, if the level at UF Permeate tank is below the high level then UF will remains in its service cycle. UF system will not start its Backflush up rinse and Backflush down rinse cycle unless and until UF Permeate tank level becomes high.

2) There shall be Timer reset button for UF on the HMI. By pressing this button system will reset the UF respective cycles and will go back to UF service cycle. Access level to this button shall be to Manager and Administrator level only.

3) When system is performing the UF Backflush cycle or UF Fast Flush cycle and in case if the level at UF Permeate Tank becomes Low-low level, then the system trip respective Backflush/fast flush pump, close the UF respective cycle valves and will hold the UF respective cycle timer. Supervisor / Manager or Administrator will press the UF Reset button to start the UF in Normal Mode. All the timer of UF will reset as soon as reset button is pressed.

4) When the Level in all 3 tanks Boiler Tank 199.2T-01, Chiller Tank 199.2T-02 and Chiller Tank 199.2T-03 is High- High Level then System will close the Utility inlet Valve and then after when level in any one Tank becomes High Level System will Open the Utility Inlet Valve. 5) In Auto Mode UF Feed Pump shall be controlled with respect to three variant conditions control set-point added in the HMI in Hz.

A) When UF Permeate Valve is Open and Utility Inlet Valve is Close.

B) When Utility Inlet Valve is Open and UF Permeate Valve is Close.

C) When UF Permeate Valve is Open and Utility Inlet Valve is Open.

6) UF Feed pump shall be selectable from HMI. When any one of the pump is running, pump selection button shall remain disable.

7) During any Auto Cycle, Auto valve should open first and then after delay of 10 sec. respective pump will start.

8) During Switch over of Existing Cycle to New Cycle, System will first Open the New Cycle Valve and then Close the Existing Cycle Valves and then after delay of 10 Sec. Start the respective Pump.

									٨	MANUAL MO	ODE									
AFR-PS-L	At Air Line	Low	NA	NA	NA	NA	x	x	x	x	x	x	x	x	x	x	ſ	ſ	"Air Pressure Low"	In case if the Air pressure switch installed at Air Filter regulator unit becomes low, then system will stop or turn Off all the field devices and will give an alarm . Thenafter when the Air Pressure switch becomes healthy, then the system will not switch On the field devices. User has to again press the particular field devices icons in order to start or turn it On
Emergency Switch	On Control Panel	Emergency Switch Pressed	NA	NA	NA	NA	x	Х	Х	x	x	x	x	x	x	x	ſ	ſ	"Emergency Switch Pressed"	In case if the user presses the Emergency switch button from the panel, then system will stop or turn Off all the field devices and will initiate an alarm (Fault Lamp & Hooter). Thenafter when the user releases the Emergency switch button from the panel, then the system will not switch On the field devices. User has to again press the particular field devices icons in order to start or turn it On
Power	Of Control Panel	Power Fails	NA	NA	NA	NA	x	X	X	X	x	X	x	x	x	x	x	x	NA	In case if there is a power failure then the system will stop or turn Off all the field devices. When the Power resumes back, system will not switch On the field devices. User has to again press the particular field device icon in order to start or turn it On

	CLIENT :																			
	CONSULTANT:																			
	PROJECT :	PURIFIED WATER GENEI	RATION STSTEM - PRETE	KEATMENT (UF)																
	DUC.NO .																			
Tag	REF.DWG :	Condition	Full Scale Pange (Of	Full Scalo Pango	Unit	Pocoluti	100 14	102.20	110 141	110 141	110 141	110 10 01	102 20	100 24	100 24	100 24	Fault	Heater	Alarm and	DISCRIPTION
i ag	ent/Type of Cycle	Condition	Instrument)	(Of HMI)	Unit	ons	V-01	01/02	02	04	03	110.18-01	01/07	V-01	V-02	V-03	lamp	noolei		DISCRIPTION
	end type of cycle		instrument)	(0111/0)		0113	, , , ,	017 02	02	04			01/02	1 1 01	1 1 02	1 1 05	ump		message	
							Utility	UF Feed	UF	UF	UF Top	UF Back	RO Feed	Boiler	Chiller	Chiller				
							Inlet	Pump	Bottom	Permeate	Drain Valve	flush Pump	Pump	Tank	Tank	Tank				
							Valve		Drain	Valve				Inlet	Inlet	Inlet				
									valve					valve	valve	Valve				
																				In case if the Air pressure switch installed at Air
																				Filter regulator unit becomes low, then system
	At Airline	Low	NA	NA	NA	NA	Y	Y	Y	Y Y	Y	×	Y	Y	Y	× ×	г	Г	"Air Pressure	will give an alarm. Thenafter when the Air
ALK-F3-L	At All Line	LOW	INA I	INA	INA	INA	^	^		^	^	^	~		^	^	1		Low"	Pressure switch becomes healthy, then the
																				system after a delay of 30 secs will restart
																				automatically.
																				In case if the user presses the Emergency switch
																				button from the panel, then system will stop or
Fmergency		Emergency Switch																	"Fmergency	turn Off all the field devices and will give an
Switch	On Control Panel	Pressed	NA	NA	NA	NA	X	Х	X	X	Х	Х	Х	X	X	X	Ţ	ſ	Switch Pressed"	alarm. Thenafter when the user releases the
																				Emergency switch button from the panel, then
																				the system after a delay of 30 secs will restart
																				automatically
																				In case if there is a power failure then the
																				system will stop or turn Off all the field devices
Power	Of Control Panel	Power Fails	NA	NA	NA	NA	х	х	X	x	х	x	Х	x	x	x	х	Х	NA	When the Power resumes back, then the system
																				after a delay of 60 secs will restart
																				automatically.
	Level Switch																			Low-low level at Soft Water tank will trip the UF
199.1LS-02	(Soft water Storage	Low-Low	NA	NA	NA	NA	x	х	x	x	х	x	Ţ	NA	NA	NA	Ţ	ſ	"199.1LS-02 Low	feed pump, trip UF and Hold the respective
	Tank)																		Low	cycle timer of UF and will inflate an alarm
																				(Fault Lamp & Hooter).
																				Low level at Raw water tank, will start the UF
400 416 02	Level Switch	1									V	v	~				V	V		feed pump, Start UF by opening the respective
199.1LS-02	(Soft water Storage	LOW	NA	NA	NA	NA		1	×	1	^	~	1	NA	NA	NA	Χ.	×	NA	Valves and start the respective cycle timer of
	i diik)																			alarm of Low-Low level
																				Initially when the system is started in the Auto
		l ovol at LIE pormoato																		settable time period by opening respective
		is not high-high level																	"UF Service	valve. The timer shall be settable from the HMI
NA	UF Service Cycle	/ When UF Fast Flush	NA	0 to 999	Minute	###.#	NA	1	X	1	Х	Х	ſ	NA	NA	NA	Х	Х	Cvcle"	having the range from 0 min to 999 min. During
		timer is Completed																	,	this period system will give an indication on the
																				HMI stating "UF Service Cycle". During this
																				selcted pump will be ON.
																		1		1

	CLIENT :																			
	CONSULTANT:																			
		PURIFIED WATER GENER	CATION STSTEM - PRETR	CEATMENT (UF)																
	RFF DWG :																			
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instrument)	Full Scale Range (Of HMI)	Unit	Resoluti ons	199.1A V-01	103.2P- 01/ 02	110.1AV- 02	110.1AV- 04	110.1AV- 03	110.1P-01	103.3P- 01/02	199.2A V-01	199.2A V-02	199.2A V-03	Fault lamp	Hooter	Alarm and Message	DISCRIPTION
							Utility Inlet Valve	UF Feed Pump	UF Bottom Drain Valve	UF Permeate Valve	UF Top Drain Valve	UF Back flush Pump	RO Feed Pump	Boiler Tank Inlet Valve	Chiller Tank Inlet Valve	Chiller Tank Inlet Valve				
NA	UF Backflush Up Rinse Cycle	When UF service cycle timer is completed (Provided UF permeate tank level is high or high- high)	NA	0 to 999	Secs	###.#	NA	x	x	x	ſ	Ţ	ſ	NA	NA	NA	x	x	"UF Backflush Up Rinse Cycle"	As soon as the UF Service cycle timer is completed (Provided UF Permeate teank level is high or high-high), system will stop the UF Service cycle and will start the UF Backflush up rinse cycle for settable time period. System will start the backflush pump and will open respective cycle valves. The timer shall be settable from the HMI having the range from 0 secs to 999 secs. During this period system will give an indication on the HMI stating "UF Backflush Up Rinse Cycle"
NA	UF Backflush Down Rinse Cycle	When UF Backflush Down rinse cycle is completed	NA	0 to 999	Secs	###.#	NA	x	ſ	x	x	ſ	ſ	NA	NA	NA	x	x	"UF Backflush Down Rinse Cycle"	As soon as UF Backflush UP rinse cycle timer is completed, system will start the UF Backflush down rinse cycle for settable time period. System will start the back wash pump and will open respective cycle valves. The timer shall be settable from the HMI having the range from 0 secs to 999 secs. During this period system will give an indication on the HMI stating "UF Backflush Down Rinse Cycle"
NA	UF Fast Flush Cycle	When UF Backflush Down rinse cycle is completed	NA	0 to 999	Secs	###.#	NA	ſ	x	x	ſ	x	ſ	NA	NA	NA	x	x	"UF Fast Flush Cycle"	As soon as UF Backflush down rinse cycle timer is completed, system will start the UF fast flush cycle for settable time period. System will start Uf Feed pump and will open respective cycle valves. The timer shall be settable from the HMI having the range from 0 secs to 999 secs. During this period system will give an indication on the HMI stating "UF Fast Flush Cycle". During this selcted pump will be ON.
199.1LS-05	Level Switch (UF Permeate Tank)	High-High	NA	NA	NA	NA	NA	x	x	x	x	x	Ţ	NA	NA	NA	x	x	"199.1LS-05 High High"	High-high level at UF Permeate tank will close UF Permeate valve and will hold the UF respective service cycle timer and will intiate an alarm (Only Text).
199.1.LS-05	Level Switch (UF Permeate Tank)	High	NA	NA	NA	NA	NA	Į	x	ſ	x	х	Į	NA	NA	NA	x	x	NA	High level at UF Permeat tank will Open UF Permeate valves and Start the UF Service Cycle timer from held time and will acknowledge the alarm of High-high level.
199.1LS-05	Level Switch (UF Permeate Tank)	Low-Low	NA	NA	NA	NA	NA	ſ	x	ſ	x	х	Х	NA	NA	NA	ſ	ſ	"199.1LS-05 Low Low"	Low-low level at UF Permeat tank will trip the RO feed pump and will intiate an alarm (Fault Lamp & Hooter).
199.1.LS-05	Level Switch (UF Permeate Tank)	Low	NA	NA	NA	NA	NA	ſ	x	Ţ	x	x	ſ	NA	NA	NA	x	x	NA	Low level at UF Permeat tank, will start the RO feed pump and will acknowledge the alarm of Low- Low level. During this selcted pump will be ON.

	PRO IFCT ·	PURIFIED WATER GEN	FRATION SYSTEM - PRETR	FATMENT (LIF)																
	DOC.NO :	T OKITIED WATER GER																		
	REF.DWG :																			
Tag	Instrument/Equipm ent/Type of Cycle	Condition	Full Scale Range (Of Instrument)	Full Scale Range (Of HMI)	Unit	Resoluti ons	199.1A V-01	103.2P- 01/ 02	110.1AV- 02	110.1AV- 04	110.1AV- 03	110.1P-01	103.3P- 01/02	199.2A V-01	199.2A V-02	199.2A V-03	Fault Iamp	Hooter	Alarm and Message	DISCRIPTION
							Utility Inlet Valve	UF Feed Pump	UF Bottom Drain Valve	UF Permeate Valve	UF Top Drain Valve	UF Back flush Pump	RO Feed Pump	Boiler Tank Inlet Valve	Chiller Tank Inlet Valve	Chiller Tank Inlet Valve				
199.2LS-01	Level Switch (Boiler Tank)	High-High	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	x	NA	NA	х	х	"199.2LS-01 High High"	High-high level at Boiler tank will close Boiler Tank Inlet Valve and will intiate an alarm (Only Text).
199.2LS-01	Level Switch (Boiler Tank)	High	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	ſ	NA	NA	х	Х	NA	High level at Boiler tank will Open Boiler Tank Inlet Valve and will acknowledge the alarm of High-high level.
199.2LS-01	Level Switch (Boiler Tank)	Low-Low	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	ſ	NA	NA	ſ	ſ	"199.2LS-01 Low Low"	Low-low level at Boiler tank will intiate an alarm (Fault Lamp & Hooter).
199.2LS-01	Level Switch (Boiler Tank)	Low	NA	NA	NA	NA	Ţ	NA	NA	NA	NA	NA	NA	ſ	NA	NA	x	х	NA	Low level at Boiler tank will acknowledge the alarm of Low- Low level.
199.2LS-02	Level Switch (Chiller Tank Tank)	High-High	NA	NA	NA	NA	Ţ	NA	NA	NA	NA	NA	NA	NA	х	NA	x	х	"199.2LS-02 High High"	High-high level at Chiller tank will close Chiller Tank Inlet Valve and will intiate an alarm (Only Text).
199.2LS-02	Level Switch (Chiller Tank Tank)	High	NA	NA	NA	NA	Ţ	NA	NA	NA	NA	NA	NA	NA	ſ	NA	х	х	NA	High level at Chiller tank will Open Chiller Tank Inlet Valve and will acknowledge the alarm of High-high level.
199.2LS-02	Level Switch (Chiller Tank Tank)	Low-Low	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	NA	Ţ	NA	Ţ	ſ	"199.2LS-02 Low Low"	Low-low level at Chiller tank will intiate an alarm (Fault Lamp & Hooter).
199.2LS-02	Level Switch (Chiller Tank Tank)	Low	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	NA	Ţ	NA	x	х	NA	Low level at Chiller tank will acknowledge the alarm of Low- Low level.
199.2LS-03	Level Switch (Chiller Tank Tank)	High-High	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	NA	NA	х	х	х	"199.2LS-03 High High"	High-high level at Chiller tank will close Chiller Tank Inlet Valve and will intiate an alarm (Only Text).
199.2LS-03	Level Switch (Chiller Tank Tank)	High	NA	NA	NA	NA	ſ	NA	NA	NA	NA	NA	NA	NA	NA	Ţ	х	х	NA	High level at Chiller tank will Open Chiller Tank Inlet Valve and will acknowledge the alarm of High-high level.
199.2LS-03	Level Switch (Chiller Tank Tank)	Low-Low	NA	NA	NA	NA	Ţ	NA	NA	NA	NA	NA	NA	NA	NA	Ţ	ſ	ſ	"199.2LS-03 Low Low"	Low-low level at Chiller tank will intiate an alarm (Fault Lamp & Hooter).
199.2LS-03	Level Switch (Chiller Tank Tank)	Low	NA	NA	NA	NA	Ţ	NA	NA	NA	NA	NA	NA	NA	NA	Ţ	x	X	NA	Low level at Chiller tank will acknowledge the alarm of Low- Low level.
R0					Client	Appro	val													
Rev. no.		Date			Relea	ased fo	or				Check	ed By					Prepa	red By		Approved By