


Shutdown Key Example (002)

DRAWING NO.		REV		P&ID		NOTES							
http://www.impel.ca		0											
SHUTDOWN KEY CAUSE AND EFFECT CHART		EXAMPLE SHUTDOWN KEY PUMP STATION		DRAWN BY:		CHECKED BY:							
NO. REVISION ISSUED FOR REVIEW		DRAWN BY:		CHECKED BY:		APPROVED BY:							
0													
LEGEND:				EFFECT ACTIVATING DEVICE									
CTR = CONTROL X = DE-ENERGIZE, CL = CLOSE, SP = STOP O = ENERGIZE, OP = OPEN, ST = START TD = Time Delay, ELF=EASY LINE FILL, XAR= AutoRestart 30 sec				P&ID TAG NO.									
SHUTDOWN KEY - CAUSE AND EFFECT CHART				SERVICE									
NOTES: See Instrument List for Setpoints				PUMP #1 FORWARD RUN									
				PUMP #1 ENABLE 4.20mA SPEED CONTROL									
All text written in red and all cells highlighted in blue are pending confirmation.				PUMP #2 FORWARD RUN									
				PUMP #2 ENABLE 4.20mA SPEED CONTROL									
				PUMP #1 VFD DEMAND									
				PUMP #2 VFD DEMAND									
ACT.	P&ID	TAG NO.	DESCRIPTION	SD TYPE	I/O	TAG NO.	1	2	3	4	5	6	7
		PT1000_FLT	PT-1000 PIPELINE PRESSURE TX. FAULT	FAULT	%AI1						ELF	ELF	
		PT1000_LL	PT-1000 PIPELINE PRESSURE TX. LO LO	LO LO	%AI1		XAR	XAR			SP	SP	5 Minute Debounce
		PT1000_L	PT-1000 PIPELINE PRESSURE TX. LO	LO	%AI1								
		PT1000_H	PT-1000 PIPELINE PRESSURE TX. HI	HI	%AI1								
		PT1000_HH	PT-1000 PIPELINE PRESSURE TX. HI HI	HI HI	%AI1		XAR	XAR			SP	SP	1 Minute Debounce
		PT1000_HH_F	PT-1000 PIPELINE PRESSURE TX. HI HI FIRE	HI HI F	%AI1		X	X			SP	SP	ON SCREEN ENABLED
		HS_P1AUTO	PUMP #1 IN AUTO	CNTRL	%I0		CTR	CTR			CTR		
		HS_P1HAND	PUMP #1 IN HAND	CNTRL	%I1		X	X			SP		
		HS_P2AUTO	PUMP #2 IN AUTO	CNTRL	%I2				CTR	CTR	CTR		
		HS_P2HAND	PUMP #2 IN HAND	CNTRL	%I3		X	X			SP		
		RS_VFD1	PUMP #1 FAIL TO RUN	FAULT	%I3		X	X			SP		
		FLT_VFD1	PUMP #1 VFD FAULT	FAULT	%I4		X	X			SP		
		RS_VFD2	PUMP #2 FAIL TO RUN	FAULT	%I5				X	X	SP		
		FLT_VFD2	PUMP #2 VFD FAULT	FAULT	%I6				X	X	SP		
		SD_SMOKE	BUILDING SMOKE DETECTOR TRIP	TRIP	%I7		X	X	X	X	SP	SP	1 OF 1 WITH ITSELF
		SD_HEAT	BUILDING HEAT DETECTOR TRIP	TRIP	%I8		X	X	X	X	SP	SP	2 OF 2 WITH SMOKE DETECTOR