

**SPECIFICATION NUMBER:**  
**TCE.7547A-H-OST-300 / R0**


## CONTROL VALVE FOLLOW UP SHEET


SECTION : 4.2.35  
SHEET 3 OF 3

Sl.no	TAG NO:	SERVICE:	PRESSURE Kg/cm2(g)		TEMPERATURE		SHUT OFF PR:	FLUID	FLOW RATE			Specific Gravity	FLANGE RATING	LINE NO	PID NO	AREA CLASSIFICATION	REMARKS
			Operating	Design	Operating	Design			Min	Max	Unit						
1	TCV-2101	Temperature control valve at the inlet of crude oil Heat Exchanger E-001	7	8.7	30	60	9.4	LIQUID	62393.1	503362	KG/HR	0.854 - 0.923	150# RF	12"-WCO-2117-CB1-IH	TCE.7547A-300-PI-8021	Zone 1	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
2	TCV-2104	Temperature control valve in the CWR line from Dry crude oil cooler E-002	5	6	37	65	6.7	LIQUID	--	1500000	KG/HR	0.992	150# RF	H"-CWR-2113-CA	TCE.7547A-300-PI-8021	Zone 1	GASKET MATERIAL: EPDM
3	TCV-2202	Temperature Control valve in the steam inlet to Wet crude oil storage Tank T-001	3.5	4.5	148	160	5.2	VAPOUR	150	800	KG/HR	1.85	150# RF	4"-SL-XXXX-CC-IH	TCE.7547A-300-PI-8022	Zone 2	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
4	TCV-2302	Temperature Control valve in the steam inlet to Wet crude oil storage Tank T-002	3.5	4.5	148	160	5.2	VAPOUR	150	800	KG/HR	1.85	150# RF	4"-SL-XXXX-CC-IH	TCE.7547A-300-PI-8023	Zone 2	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
5	TCV-2402	Temperature Control valve in the steam inlet to Wet crude oil storage Tank T-003	3.5	4.5	148	160	5.2	VAPOUR	100	550	KG/HR	1.85	150# RF	4"-SL-XXXX-CC-IH	TCE.7547A-300-PI-8024	Zone 2	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
6	TCV-2502	Temperature Control valve in the steam inlet to Wet crude oil storage Tank T-004	3.5	4.5	148	160	5.2	VAPOUR	100	550	KG/HR	1.85	150# RF	4"-SL-XXXX-CC-IH	TCE.7547A-300-PI-8025	Zone 2	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
7	TCV-2602	Temperature Control valve in the steam inlet to Wet crude oil storage Tank T-005	3.5	4.5	148	160	5.2	VAPOUR	100	550	KG/HR	1.85	150# RF	4"-SL-XXXX-CC-IH	TCE.7547A-300-PI-8026	Zone 2	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
8	TCV-2702	Temperature Control valve in the steam inlet to Wet crude oil storage Tank T-006	3.5	4.5	148	160	5.2	VAPOUR	100	550	KG/HR	1.85	150# RF	4"-SL-XXXX-CC-IH	TCE.7547A-300-PI-8027	Zone 2	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
9	PCV-2001	Pressure control valve in the Wet crude oil header	25.6	64.1	30	-	76.92	Wet Crude Oil	50	125	M3/HR	-	600# RTJ	12"-WCO-2001-CF-IH	TCE.7547A-300-PI-8020	Zone 1	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
10	PCV-2002	Pressure control valve in the Wet crude oil header	13.4	35.8	30	-	42.96	Wet Crude Oil	312.5	416.6	M3/HR	-	600# RTJ	8"-WCO-2003-CF-IH	TCE.7547A-300-PI-8020	Zone 1	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
11	PCV-2003	Pressure control valve in the Natural gas header	3.5	-	--	AMB.	NOTE 1	VAPOUR	130	1100	KG/HR	1.975	150# RF	4"-NG-2008-CB2	TCE.7547A-300-PI-8020	Zone 1	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER
12	PCV-2004	Pressure control valve in the Natural gas header	3.5	-	--	AMB.	NOTE 1	VAPOUR	130	1100	KG/HR	1.975	300# RF	2"-NG-2010-CD2	TCE.7547A-300-PI-8020	Zone 1	GASKET MATERIAL: SPIRAL WOUND SS316+GRAPHOIL FILLER

**NOTE 1 : Pressure requirement at Boiler & CPP battery limit to be informed by respective vendors to arrive at pressure drop value for the control valve.**

INPUT / OUTPUT LIST

REVISION	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE
	R0	AGR	CS	13.10.14																
	R1	AGR	CS	05.01.15																
	R2	AGR	CS	22.04.15																
	R3	AGR	CS	24.06.15																
 TATA CONSULTING ENGINEERS LIMITED					PPD. BY	AGR	JOB NO.	CLIENT:	OIL INDIA LIMITED						DOC. NO.: TCE.7547A-LS-580-2003				ISSUE R3	
INPUT / OUTPUT LIST					CHD. BY	CS	TCE. 7547A													
					DATE	24.06.15		PROJECT:	SECONDARY TANKFARM AREA						SH. 1 OF 36					

										LIST OF REFERENCE DOCUMENTS										
										SL.NO.	DOCUMENT NO.	REV	TITLE							
										1	TCE.7547A-300-PI-8020	R1	P&ID for STF Inlet Battery Limits							
										2	TCE.7547A-300-PI-8021	R1	P&ID for STF Wet crude oil Preheating (BH-001A/B, E-001& 002)							
										3	TCE.7547A-300-PI-8022	R1	P&ID for Crude Oil Storage Tank T-001							
										4	TCE.7547A-300-PI-8023	R1	P&ID for Crude Oil Storage Tank T-002							
										5	TCE.7547A-300-PI-8024	R1	P&ID for Crude Oil Storage Tank T-003							
										6	TCE.7547A-300-PI-8025	R1	P&ID for Crude Oil Storage Tank T-004							
										7	TCE.7547A-300-PI-8026	R1	P&ID for Crude Oil Storage Tank T-005							
										8	TCE.7547A-300-PI-8027	R1	P&ID for Crude Oil Storage Tank T-006							
										9	TCE.7547A-300-PI-8028	R1	P&ID for Crude Oil Circulation Pumps & Accumulated Water Transfer Pumps							
										10	TCE.7547A-300-PI-8029	R1	P&ID for Indirect Bath Heater (BH-00A/B/C/D)							
										11	TCE.7547A-300-PI-8030	R1	P&ID for Electrostatic Emulsion Treater (EET-001A/B)							
										12	TCE.7547A-300-PI-8031	R1	P&ID for Electrostatic Emulsion Treater (EET-002A/B)							
										13	TCE.7547A-300-PI-8032	R1	P&ID for Dry Crude Oil Despatch System							
										14	TCE.7547A-300-PI-8033	R0	P&ID for Effluent Treatment Plant							
										15	TCE.7547A-300-PI-8034	R0	P&ID for Effluent Treatment Plant							
										16	TCE.7547A-300-PI-8040	R0	P&ID for Effluent Treatment Plant							
										17	TCE.7547A-600-PI-1103	P0	P&ID for Water Supply System							
										18	TCE.7547A-615-PI-1105	P0	P&ID for Steam Distribution System							
										19	TCE.7547A-617-PI-1106	P1	P&ID for Fire Water Pump House							
REVISION	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE	REV. NO.	REV. BY	CHD. BY	DATE
	R0	AGR	CS	13.10.2014																
	R1	AGR	CS	09.01.2015																
	R2	AGR	CS	22.04.15																
	R3	AGR	CS	24.06.15																
 TATA CONSULTING ENGINEERS LIMITED						PPD. BY	AGR	JOB NO.	CLIENT:	OIL INDIA LIMITED						DOC. NO.: TCE.7547A-LS-580-2003				ISSUE R3
						CHD. BY	CS	TCE.												
INPUT / OUTPUT LIST						DATE	24.06.15	7547A	PROJECT:	SECONDARY TANKFARM AREA						SH. 2 OF 36				

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	BPCS / INSTRUM ENT	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
CRUDE OIL STORAGE TANK (T-001) - TCE.7547A-300-PI-8022																
1	TT-2201	Temperature in the Wet crude oil storage Tank T-001	TI-2201	-			Field	Digital Signal	LT-2201	-	-	-				
2	PT-2201	Pressure in the Wet crude oil storage Tank T-001	PI-2201	-			Field	Digital Signal	LT-2201	-	-	-				
3	LT-2201	Level in the Wet crude oil storage Tank T-001	LI-2201	I-2201, 2202,2203			Field	Digital Signal	BPCS	1300	15880	MM	H / L			
CRUDE OIL STORAGE TANK (T-002) - TCE.7547A-300-PI-8023																
4	TT-2301	Temperature in the Wet crude oil storage Tank T-002	TI-2301	-			Field	Digital Signal	LT-2301							
5	PT-2301	Pressure in the Wet crude oil storage Tank T-002	PI-2301	-			Field	Digital Signal	LT-2301							
6	LT-2301	Level in the Wet crude oil storage Tank T-002	LI-2301	I-2301, 2302,2303			Field	Digital Signal	BPCS	1300	15880	MM	H / L			
CRUDE OIL STORAGE TANK (T-003) - TCE.7547A-300-PI-8024																
7	TT-2401	Temperature in the Wet crude oil storage Tank T-003	TI-2401	-			Field	Digital Signal	LT-2401	-	-	-				
8	PT-2401	Pressure in the Wet crude oil storage Tank T-003	PI-2401	-			Field	Digital Signal	LT-2401	-	-	-				
9	LT-2401	Level in the Wet crude oil storage Tank T-003	LI-2401	I-2401, 2402,2403			Field	Digital Signal	BPCS	1340	11880	MM	H / L			
CRUDE OIL STORAGE TANK (T-004) - TCE.7547A-300-PI-8025																
10	TT-2501	Temperature in the Wet crude oil storage Tank T-004	TI-2501	-			Field	Digital Signal	LT-2501	-	-	-				
11	PT-2501	Pressure in the Wet crude oil storage Tank T-004	PI-2501	-			Field	Digital Signal	LT-2501	-	-	-				
12	LT-2501	Level in the Wet crude oil storage Tank T-004	LI-2501	I-2501, 2502,2503			Field	Digital Signal	BPCS	1340	11880	MM	H / L			
CRUDE OIL STORAGE TANK (T-005) - TCE.7547A-300-PI-8026																
13	TT-2601	Temperature in the Wet crude oil storage Tank T-005	TI-2601	-			Field	Digital Signal	LT-2601	-	-	-				
14	PT-2601	Pressure in the Wet crude oil storage Tank T-005	PI-2601	-			Field	Digital Signal	LT-2601	-	-	-				
15	LT-2601	Level in the Wet crude oil storage Tank T-005	LI-2601	I-2601, 2602,2603			Field	Digital Signal	BPCS	1340	11880	MM	H / L			
CRUDE OIL STORAGE TANK (T-006) - TCE.7547A-300-PI-8027																
16	TT-2701	Temperature in the Wet crude oil storage Tank T-006	TI-2701	-			Field	Digital Signal	LT-2701	-	-	-				
17	PT-2701	Pressure in the Wet crude oil storage Tank T-006	PI-2701	-			Field	Digital Signal	LT-2701	-	-	-				
18	LT-2701	Level in the Wet crude oil storage Tank T-006	LI-2701	I-2701, 2702,2703			Field	Digital Signal	BPCS	1340	11880	MM	H / L			

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					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
STF INLET BATTERY LIMITS (CRUDE OIL AND NATURAL GAS) - TCE.7547A-300-PI-8020																
1	PY-2001	Smart Positioner for Pressure Control Valve - PCV-2001	PCV-2001				Field	FF	24 VDC							
2	PY-2002	Smart Positioner for Pressure Control Valve - PCV-2002	PCV-2002				Field	FF	24 VDC							
3	PY-2003	Smart Positioner for Pressure Control Valve - PCV-2003	PCV-2003				Field	FF	24 VDC							
4	PY-2004	Smart Positioner for Pressure Control Valve - PCV-2004	PCV-2004				Field	FF	24 VDC							
5	PT-2001	Pressure in the Wet crude oil header	PIC-2001				Field	FF	24 VDC	0 - 16	-	Kg/Cm2 (g)	H			
6	PT-2002	Pressure in the Wet crude oil header	PIC-2002				Field	FF	24 VDC	0 - 16	-	Kg/Cm2 (g)	H			
7	PT-2003	Pressure in the Natural gas header	PIC-2003				Field	FF	24 VDC	0 - 6	-	Kg/Cm2 (g)	H			
8	PT-2004	Pressure in the Natural gas header	PIC-2004				Field	FF	24 VDC	0 - 6	-	Kg/Cm2 (g)	H			
9	PT-2005	Pressure in the Natural gas Knock out drum V-001	PI-2005				Field	FF	24 VDC	0 - 6	-	Kg/Cm2 (g)	H, L			
10	PT-2012	Pressure in the Natural gas header	PIC-2012				Field	FF	24 VDC	HOLD	-		LL			
11	FT-2001	Flow in Wet crude oil Header	FRT-2001				Field	FF	24 VDC	60-420	-	M <sup>3</sup> / Hr.	H, L			
12	FT-2002	Flow in Wet crude oil Header	FRT-2002				Field	FF	24 VDC	10-125	-	M <sup>3</sup> / Hr.	H, L			
13	FT-2003	Flow in the Natural gas header	FRT-2003				Field	FF	24 VDC	HOLD	-		H			
14	FT-2004	Flow in the Natural gas header	FRT-2004				Field	FF	24 VDC	HOLD	-		H			
15	FT-2005	Flow in the Condensate Oil header	FRT-2005				Field	FF	24 VDC	10-125	-	M <sup>3</sup> / Hr.				
18	AT-2001	Water in Oil analyser in Crude oil header	AI-2001				Field	FF	24 VDC	0 – 55% V/V BS&W	-	%				
19	AT-2002	Water in Oil analyser in Crude oil header	AI-2002				Field	FF	24 VDC	0 – 55% V/V BS&W	-	%				
20	LT-2001	Level in the Natural gas Knock out drum level V-001	LI-2001				Field	FF	24 VDC	0 – 2040	-	MMWC	H, L			
21	ZSO-2009	Open Limit switch for On - Off valve XV-2009	XV-2009	I-2001,2002			Field	DI	Pot. Free							
22	ZSC-2009	Close Limit switch for On - Off valve XV-2009	XV-2009	I-2001,2002			Field	DI	Pot. Free							
23	SOV-2009	Solenoid Valve for On - Off valve XV-2009	XV-2009	I-2001,2002			Field	DO	24 VDC							
WET CRUDE OIL PREHEATING - TCE.7547A-300-PI-8021																
24	TY-2101	Smart Positioner for Temperature Control Valve TCV-2101	TCV-2101				Field	FF	24 VDC							
25	TY-2104	Smart Positioner for Temperature Control Valve TCV-2104	TCV-2104				Field	FF	24 VDC							
26	TT-2101	Temperature in the Wet crude oil outlet from Crude oil Heat Exchanger E-001	TIC-2101				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
27	TT-2102	Temperature in the dry crude oil inlet to Crude oil Heat Exchanger E-001	TI-2102				Field	FF	24 VDC	0-90		Deg.Celsius	H, L			
28	TT-2103	Temperature in the dry crude oil outlet from Crude oil Heat Exchanger E-001	TI-2103				Field	FF	24 VDC	0-55		Deg.Celsius	H, L			
29	TT-2104	Temperature in the dry crude oil outlet from Dry crude oil cooler E-002	TIC-2104				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
30	FT-2101	Flow in the Wet Crude Oil Header	FIC-2101				Field	FF	24 VDC	80-560	-	M <sup>3</sup> / Hr.	H			

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	IO TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
31	FT-2102	Flow in theDry Crude Oil Header	FIC-2102				Field	FF	24 VDC	14-540		M <sup>3</sup> / Hr.	H			
CRUDE OIL STORAGE TANK (T-001) - TCE.7547A-300-PI-8022																
32	TY-2202	Smart Positioner for Temperature Control Valve TCV-2202	TCV-2202				Field	FF	24 VDC							
33	TT-2202	Temperature in the Wet crude oil storage Tank T-001	TIC-2202				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
34	TT-2204	Temperature in the steam inlet to Wet crude oil storage Tank T-001	TI-2204				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
35	TT-2205	Temperature in the Condensate return from Wet crude oil storage Tank T-001	TI-2205				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
36	PT-2202	Pressure in the steam inlet to Wet crude oil storage Tank T-001	PI-2202				Field	FF	24 VDC	0 - 10		Kg/Cm2 (g)	H, L			
CRUDE OIL STORAGE TANK (T-002) - TCE.7547A-300-PI-8023																
37	TY-2302	Smart Positioner for Temperature Control Valve TCV-2302	TCV-2302				Field	FF	24 VDC							
38	TT-2302	Product Temperature of Tank T-002	TIC-2302				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
39	TT-2304	Steam supply Line to T-002	TI-2304				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
40	TT-2305	Steam Return Line from T-002	TI-2305				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
41	PT-2302	Steam supply Line Pressure to T-002	PI-2302				Field	FF	24 VDC	0 - 10		Kg/Cm2 (g)	H, L			
CRUDE OIL STORAGE TANK (T-003) - TCE.7547A-300-PI-8024																
42	TY-2402	Smart Positioner for Temperature Control Valve TCV-2402	TCV-2402				Field	FF	24 VDC							
43	TT-2402	Temperature in the Wet crude oil storage Tank T-003	TIC-2402				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
44	TT-2404	Temperature in the steam inlet to Wet crude oil storage Tank T-003	TI-2404				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
45	TT-2405	Temperature in the Condensate return from Wet crude oil storage Tank T-003	TI-2405				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
46	PT-2402	Pressure in the steam inlet to Wet crude oil storage Tank T-003	PI-2402				Field	FF	24 VDC	0 - 10		Kg/Cm2 (g)	H, L			
CRUDE OIL STORAGE TANK (T-004) - TCE.7547A-300-PI-8025																
47	TY-2502	Smart Positioner for Temperature Control Valve TCV-2502	TCV-2502				Field	FF	24 VDC							
48	TT-2502	Temperature in the Wet crude oil storage Tank T-004	TI-2502				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
49	TT-2504	Temperature in the steam inlet to Wet crude oil storage Tank T-004	TI-2504				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
50	TT-2505	Temperature in the Condensate return from Wet crude oil storage Tank T-004	TI-2505				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
51	PT-2502	Pressure in the steam inlet to Wet crude oil storage Tank T-004	PI-2502				Field	FF	24 VDC	0 - 10		Kg/Cm2 (g)	H, L			
CRUDE OIL STORAGE TANK (T-005) - TCE.7547A-300-PI-8026																
52	TY-2602	Smart Positioner for Temperature Control Valve TCV-2602	TCV-2602				Field	FF	24 VDC							
53	TT-2602	Temperature in the Wet crude oil storage Tank T-005	TIC-2602				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
53	TT-2604	Temperature in the steam inlet to Wet crude oil storage Tank T-005	TI-2604				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
53	TT-2605	Temperature in the Condensate return from Wet crude oil storage Tank T-005	TI-2605				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			

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					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
53	PT-2602	Pressure in the steam inlet to Wet crude oil storage Tank T-005	PI-2602				Field	FF	24 VDC	0 - 10		Kg/Cm2 (g)	H, L			
CRUDE OIL STORAGE TANK (T-006) - TCE.7547A-300-PI-8027																
54	TY-2702	Smart Positioner for Temperature Control Valve TCV-2702	TCV-2702				Field	FF	24 VDC							
55	TT-2702	Temperature in the Wet crude oil storage Tank T-006	TIC-2702				Field	FF	24 VDC	0-45		Deg.Celsius	H, L			
56	TT-2704	Temperature in the steam inlet to Wet crude oil storage Tank T-006	TI-2704				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
57	TT-2705	Temperature in the Condensate return from Wet crude oil storage Tank T-006	TI-2705				Field	FF	24 VDC	0-128		Deg.Celsius	H, L			
58	PT-2702	Pressure in the steam inlet to Wet crude oil storage Tank T-006	PI-2702				Field	FF	24 VDC	0 - 10		Kg/Cm2 (g)	H, L			
CRUDE OIL CIRCULATION PUMPS AND ACCUMULATED WATER TRANSFER PUMPS - TCE.7547A-300-PI-8028																
59	FT-2801	Flow in the Wet Crude Oil Header	FIC-2801				Field	FF	24 VDC	80-560	-	M <sup>3</sup> / Hr.	H, L			
60	FT-2802	Flow in the Wet Crude Oil Header	FIC-2802				Field	FF	24 VDC	0-330	-	M <sup>3</sup> / Hr.	H, L			
ELECTROSTATIC EMULSION TREATER (EET-001A/B) - TCE.7547A-300-PI-8030																
61	AT-3001	Water in Oil analyser at the outlet of Electrostatic emulsion treater EET-001A	AI-3001	I-3001A, B			Field	FF	24 VDC	0 – 0.3 % V/V BS&W	-	%	H, L			
62	AT-3003	Oil in water analyser at the outlet of Electrostatic emulsion treater EET-001A	AI-3003				Field	FF	24 VDC	0 – 2000 PPM OIL	-	PPM	H			
63	AT-3005	Water in oil analyser in the dry crude oil header	AI-3005				Field	FF	24 VDC	0 – 0.3 % V/V BS&W	-	%	H, L			
64	AT-3002	Water in Oil analyser at the outlet of Electrostatic emulsion treater EET-001B	AI-3002	I-3001A, B			Field	FF	24 VDC		-		H, L			
65	AT-3004	Oil in water analyser at the outlet of Electrostatic emulsion treater EET-001A	AI-3004				Field	FF	24 VDC	0 – 2000 PPM OIL	-	PPM	H			
66	ZSO-3001A	Open Limit switch for On - Off valve XSV-3001A	XSV-3001A	I-3001A			Field	DI	Pot. Free							
67	ZSC-3001A	Close Limit switch for On - Off valve XSV-3001A	XSV-3001A	I-3001A			Field	DI	Pot. Free							
68	SOV-3001A	Solenoid Valve for On - Off valve XSV-3001A	XSV-3001A	I-3001A			Field	DO	24 VDC							
69	ZSO-3001B	Open Limit switch for On - Off valve XSV-3001B	XSV-3001B	I-3001B			Field	DI	Pot. Free							
70	ZSC-3001B	Close Limit switch for On - Off valve XSV-3001B	XSV-3001B	I-3001B			Field	DI	Pot. Free							
71	SOV-3001B	Solenoid Valve for On - Off valve XSV-3001B	XSV-3001B	I-3001B			Field	DO	24 VDC							
72	ZSO-3002A	Open Limit switch for On - Off valve XSV-3002A	XSV-3002A	I-3002A			Field	DI	Pot. Free							
73	ZSC-3002A	Close Limit switch for On - Off valve XSV-3002A	XSV-3002A	I-3002A			Field	DI	Pot. Free							
74	SOV-3002A	Solenoid Valve for On - Off valve XSV-3002A	XSV-3002A	I-3002A			Field	DO	24 VDC							
75	ZSO-3002B	Open Limit switch for On - Off valve XSV-3002B	XSV-3002B	I-3002B			Field	DI	Pot. Free							
76	ZSC-3002B	Close Limit switch for On - Off valve XSV-3002B	XSV-3002B	I-3002B			Field	DI	Pot. Free							
77	SOV-3002B	Solenoid Valve for On - Off valve XSV-3002B	XSV-3002B	I-3002B			Field	DO	24 VDC							
ELECTROSTATIC EMULSION TREATER (EET-001C/D) - TCE.7547A-300-PI-8031																
78	AT-3101	Water in Oil analyser at the outlet of Electrostatic emulsion treater EET-001C	AI-3101	I-3102A, B			Field	FF	24 VDC	0 – 0.3 % V/V BS&W	-	%	H, L			

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	IO TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
79	AT-3103	Oil in water analyser at the outlet of Electrostatic emulsion treater EET-001C	AI-3103				Field	FF	24 VDC	0 – 2000 PPM OIL	-	PPM	H			
80	AT-3102	Water in Oil analyser at the outlet of Electrostatic emulsion treater EET-001D	AI-3002	I-3102A, B			Field	FF	24 VDC	0 – 0.3 % V/V BS&W	-	%	H, L			
81	AT-3104	Water in Oil analyser at the outlet of Electrostatic emulsion treater EET-001D	AI-3104				Field	FF	24 VDC	0 – 2000 PPM OIL	-	PPM	H			
82	ZSO-3101A	Open Limit switch for On - Off valve XSV-3101A	XSV-3101A	I-3101A			Field	DI	Pot. Free							
83	ZSC-3101A	Close Limit switch for On - Off valve XSV-3101A	XSV-3101A	I-3101A			Field	DI	Pot. Free							
84	SOV-3101A	Solenoid Valve for On - Off valve XSV-3101A	XSV-3101A	I-3101A			Field	DO	24 VDC							
85	ZSO-3101B	Open Limit switch for On - Off valve XSV-3101B	XSV-3101B	I-3101B			Field	DI	Pot. Free							
86	ZSC-3101B	Close Limit switch for On - Off valve XSV-3101B	XSV-3101B	I-3101B			Field	DI	Pot. Free							
87	SOV-3101B	Solenoid Valve for On - Off valve XSV-3101B	XSV-3101B	I-3101B			Field	DO	24 VDC							
88	ZSO-3102A	Open Limit switch for On - Off valve XSV-3102A	XSV-3102A	I-3102A			Field	DI	Pot. Free							
89	ZSC-3102A	Close Limit switch for On - Off valve XSV-3102A	XSV-3102A	I-3102A			Field	DI	Pot. Free							
90	SOV-3102A	Solenoid Valve for On - Off valve XSV-3102A	XSV-3102A	I-3102A			Field	DO	24 VDC							
91	ZSO-3102B	Open Limit switch for On - Off valve XSV-3102B	XSV-3102B	I-3102B			Field	DI	Pot. Free							
92	ZSC-3102B	Close Limit switch for On - Off valve XSV-3102B	XSV-3102B	I-3102B			Field	DI	Pot. Free							
93	SOV-3102B	Solenoid Valve for On - Off valve XSV-3102B	XSV-3102B	I-3102B			Field	DO	24 VDC							
94	FT-3101	Flow in the Formation Water Header	FIQR-3101				Field	FF	24 VDC							
DRY CRUDE OIL DESPATCH SYSTEM / TCE.7547A-300-PI-8032																
95	PT-3223	Pressure in the Dry Crude oil Header	PI-3223				Field	FF	24 VDC	0 - 60		Kg/Cm2 (g)	H, L			
96	AT-3201	Water in Oil analyser in the Dry Crude oil Header	AI-3201				Field	FF	24 VDC	0 – 0.3 % V/V BS&W	-	%	H			
97	FT-3201	Flow in the Dry Crude oil Header	FRT-3201				Field	FF	24 VDC	80-560	-	M <sup>3</sup> / Hr.				
EFFLUENT TREATMENT PLANT / TCE.7547A-300-PI-8033																
98	LT-3301	Effluent Water Storage Tank	LI-3301				Field	FF	24 VDC	1200-16000		MM	H, L			
99	LT-3303	Effluent Water Storage Tank	LI-3303				Field	FF	24 VDC	1200-16000		MM	H, L			
EFFLUENT TREATMENT PLANT / TCE.7547A-300-PI-8034																
100	AT-3402	Oil in Water monito rClarified water Inlet to tank T-013 & 014	AI-3402	I-3402A, B			Field	FF	24 VDC	HOLD						
101	AT-3401	Oil in Water monitor Clarified waterInlet to tank T-013 & 014	AI-3401	I-3401A, B			Field	FF	24 VDC	HOLD						
102	FT-3401	Wet Crude Oil Flow from T-007C to Wet Crude oil Header	AI-3401	I-3401A, B			Field	FF	24 VDC	Hold	-	M <sup>3</sup> / Hr.	H, L			
103	ZSO-3401A	Clarified water Inlet to tank T-013 & 014	XV-3401A	I-3401A			Field	DI	Pot. Free							
104	ZSC-3401A	Clarified water Inlet to tank T-013 & 014	XV-3401A	I-3401A			Field	DI	Pot. Free							
105	SOV-3401A	Clarified water Inlet to tank T-013 & 014	XV-3401A	I-3401A			Field	DO	24 VDC							



SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	IO TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
106	ZSO-3401B	Clarified Water to tank T-011 & 012	XV-3401B	I-3401B			Field	DI	Pot. Free							
107	ZSC-3401B	Clarified Water to tank T-011 & 012	XV-3401B	I-3401B			Field	DI	Pot. Free							
108	SOV-3401B	Clarified Water to tank T-011 & 012	XV-3401B	I-3401B			Field	DO	24 VDC							
109	ZSO-3402A	Clarified Inlet to tank T-013 & 014	XV-3402A	I-3402A			Field	DI	Pot. Free							
110	ZSC-3402A	Clarified Inlet to tank T-013 & 014	XV-3402A	I-3402A			Field	DI	Pot. Free							
111	SOV-3402A	Clarified Inlet to tank T-013 & 014	XV-3402A	I-3402A			Field	DO	24 VDC							
112	ZSO-3402B	Clarified Water to tank T-011 & 012	XV-3402B	I-3402B			Field	DI	Pot. Free							
113	ZSC-3402B	Clarified Water to tank T-011 & 012	XV-3402B	I-3402B			Field	DI	Pot. Free							
114	SOV-3402B	Clarified Water to tank T-011 & 012	XV-3402B	I-3402B			Field	DO	24 VDC							
EFFLUENT TREATMENT PLANT / TCE.7547A-300-PI-8040																
115	LT-4001	Clarified Water Storage Tank	LI-3401				Field	FF	24 VDC	1200-16000		MM	H, L			
116	LT-4003	Clarified Water Storage Tank	LI-3403				Field	FF	24 VDC	1200-16000		MM	H, L			
117	AT-4003	Clarified Water Header	AI-3403				Field	FF	24 VDC	Hold	-	M <sup>3</sup> / Hr.	H			
118	FT-4001	UV Premate Header	FIQ-4001				Field	FF	24 VDC	Hold	-	M <sup>3</sup> / Hr.				
WATER SUPPLY SYSTEM / TCE.7547A-600-PI-1103																
119	LT-0301	Raw Water Storage sump- SU01	LI-0301	I-0301, 0303			Field	FF	24 VDC	300-2500		MM	H, L			
120	LT-0302	Filter Water Storage Pump SU-02	LI-0302	I-0302			Field	FF	24 VDC	300-2500		MM	H			
121	LT-0303	Over Head Tank Portable Water	LI-0303	I-0304			Field	FF	24 VDC	300-2000		MM	H			
122	LT-0304	Over Head Tank Industrial Water	LI-0304	I-0304			Field	FF	24 VDC	300-2000		MM	H			
123	LT-0305	Back Waste Collection Sump	LI-0305	I-0305			Field	FF	24 VDC	300-2500		MM	H			
124	FT-0301	Pump Discharge Line P-02B To IF-01	FIQR-0301				Field	FF	24 VDC	0-35		M <sup>3</sup> / Hr.				
125	FT-0302	Dual Media Filter-01 To Filter Water Storage Sump(SU-02)	FIQR-0302				Field	FF	24 VDC	0-35		M <sup>3</sup> / Hr.				
126	FT-0303	Over Head Tank Portable Water To Portable Water Dispensing Unit	FIQR-0303				Field	FF	24 VDC	0-10		M <sup>3</sup> / Hr.				
127	FT-0304	Over Head Tank Industrial Water To Process Water Header	FIQR-0304				Field	FF	24 VDC	0-6		M <sup>3</sup> / Hr.				
128	FT-0305	Over Head Tank Industrial Water To Cooling Water Makeup	FIQR-0305				Field	FF	24 VDC	0-7		M <sup>3</sup> / Hr.				
129	FT-0306	Over Head Tank Industrial Water To Boiler Feed Water	FIQR-0306				Field	FF	24 VDC	0-1		M <sup>3</sup> / Hr.				
130	FT-0307	Over Head Tank Industrial Water To Fire fighting Sump	FIQR-0307				Field	FF	24 VDC	0-15		M <sup>3</sup> / Hr.				
STEAM DISTRIBUTION SYSTEM / TCE.7547A-615-PI-1105																
131	TT-0501	Steam Temperature	TI-0501				Field	FF	24 VDC							
132	PT-0501	Steam Pressure	PI-0501				Field	FF	24 VDC	0-16		Kg/Cm2 (g)				

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	IO TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
FIRE WATER PUMP HOUSE / TCE.7547A-617-PI-1106																
133	LT-0601	Level in the Fire Water Tank T-015	LI-0601				Field	FF	24 VDC	1000-10000	-	MM				
134	LT-0602	Level in the Fire Water Tank T-016	LI-0602				Field	FF	24 VDC	1000-10000		MM				
STF INLET BATTERY LIMITS (CRUDE OIL AND NATURAL GAS) - TCE.7547A-300-PI-8020																
1	MOV-2051	MOV in the Wet crude oil header to wet crude oil receipt header					Field	Communication Protocol	BPCS							
2	MOV-2052	MOV in the Wet crude oil header to wet crude oil receipt header					Field	Communication Protocol	BPCS							
3	MOV-2053	MOV in the Wet crude oil header to Bath heater					Field	Communication Protocol	BPCS							
WET CRUDE OIL PREHEATING - TCE.7547A-300-PI-8021																
4	MOV-2151	MOV in the Wet Crude oil inlet to Bath Heater BH-001A					Field	Communication Protocol	BPCS							
5	MOV-2152	Shutdown valve in the Wet Crude oil inlet to Bath Heater BH-001B					Field	Communication Protocol	BPCS							
6	MOV-2153	MOV in the wet crude oil header					Field	Communication Protocol	BPCS							
7	MOV-2154	MOV at the inlet of crude oil Heat Exchanger E-001					Field	Communication Protocol	BPCS							
CRUDE OIL STORAGE TANK (T-001) - TCE.7547A-300-PI-8022																
8	MOV-2251	MOV in the Wet Crude Oil inlet to Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
9	MOV-2252	MOV in the Dry Crude Oil inlet to Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
10	MOV-2253	MOV in the accumulated Water outlet from Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
11	MOV-2254	MOV in the Wet Crude Oil outlet from Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
12	MOV-2255	MOV in the Dry Crude Oil outlet from Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
13	MOV-2256	MOV in the Condensate Oil inlet to Dry crude oil inlet Header					Field	Communication Protocol	BPCS							
CRUDE OIL STORAGE TANK (T-002) - TCE.7547A-300-PI-8023																
14	MOV-2351	MOV in the Wet Crude Oil inlet to Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
15	MOV-2352	MOV in the Dry Crude Oil inlet to Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
16	MOV-2353	MOV in the accumulated Water outlet from Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
17	MOV-2354	MOV in the Wet Crude Oil outlet from Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
18	MOV-2355	MOV in the Dry Crude Oil outlet from Wet crude oil storage Tank T-001					Field	Communication Protocol	BPCS							
CRUDE OIL STORAGE TANK (T-003) - TCE.7547A-300-PI-8024																

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	IO TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
19	MOV-2451	MOV in the Wet Crude Oil inlet to Wet crude oil storage Tank T-003					Field	Communication Protocol	BPCS							
20	MOV-2452	MOV in the Dry Crude Oil inlet to Wet crude oil storage Tank T-003					Field	Communication Protocol	BPCS							
21	MOV-2453	MOV in the accumulated Water outlet from Wet crude oil storage Tank T-003					Field	Communication Protocol	BPCS							
22	MOV-2454	MOV in the Wet Crude Oil outlet from Wet crude oil storage Tank T-003					Field	Communication Protocol	BPCS							
23	MOV-2455	MOV in the Dry Crude Oil outlet from Wet crude oil storage Tank T-003					Field	Communication Protocol	BPCS							
CRUDE OIL STORAGE TANK (T-004) - TCE.7547A-300-PI-8025																
24	MOV-2551	MOV in the Wet Crude Oil inlet to Wet crude oil storage Tank T-004					Field	Communication Protocol	BPCS							
25	MOV-2552	MOV in the Dry Crude Oil inlet to Wet crude oil storage Tank T-004					Field	Communication Protocol	BPCS							
26	MOV-2553	MOV in the accumulated Water outlet from Wet crude oil storage Tank T-004					Field	Communication Protocol	BPCS							
27	MOV-2554	MOV in the Wet Crude Oil outlet from Wet crude oil storage Tank T-004					Field	Communication Protocol	BPCS							
28	MOV-2555	MOV in the Dry Crude Oil outlet from Wet crude oil storage Tank T-004					Field	Communication Protocol	BPCS							
CRUDE OIL STORAGE TANK (T-005) - TCE.7547A-300-PI-8026																
29	MOV-2651	MOV in the Wet Crude Oil inlet to Wet crude oil storage Tank T-005					Field	Communication Protocol	BPCS							
30	MOV-2652	MOV in the Dry Crude Oil inlet to Wet crude oil storage Tank T-005					Field	Communication Protocol	BPCS							
31	MOV-2653	MOV in the accumulated Water outlet from Wet crude oil storage Tank T-005					Field	Communication Protocol	BPCS							
32	MOV-2654	MOV in the Wet Crude Oil outlet from Wet crude oil storage Tank T-005					Field	Communication Protocol	BPCS							
33	MOV-2655	MOV in the Dry Crude Oil outlet from Wet crude oil storage Tank T-005					Field	Communication Protocol	BPCS							
CRUDE OIL STORAGE TANK (T-006) - TCE.7547A-300-PI-8027																
34	MOV-2751	MOV in the Wet Crude Oil inlet to Wet crude oil storage Tank T-006					Field	Communication Protocol	BPCS							
35	MOV-2652	MOV in the Dry Crude Oil inlet to Wet crude oil storage Tank T-006					Field	Communication Protocol	BPCS							
36	MOV-2653	MOV in the accumulated Water outlet from Wet crude oil storage Tank T-006					Field	Communication Protocol	BPCS							
37	MOV-2654	MOV in the Wet Crude Oil outlet from Wet crude oil storage Tank T-006					Field	Communication Protocol	BPCS							
38	MOV-2655	MOV in the Dry Crude Oil outlet from Wet crude oil storage Tank T-006					Field	Communication Protocol	BPCS							
CRUDE OIL CIRCULATION PUMPS AND ACCUMULATED WATER TRANSFER PUMPS - TCE.7547A-300-PI-8028																
39	MOV-2851	MOV at the suction of Wet crude oil circulation Pump –P 001A					Field	Communication Protocol	BPCS							
40	MOV-2852	MOV at the discharge of Wet crude oil circulation Pump –P 001A					Field	Communication Protocol	BPCS							
41	MOV-2853	MOV at the suction of Wet crude oil circulation Pump –P 001B					Field	Communication Protocol	BPCS							
42	MOV-2854	MOV at the discharge of Wet crude oil circulation Pump –P 001B					Field	Communication Protocol	BPCS							
43	MOV-2855	MOV at the suction of Wet crude oil circulation Pump –P 001C					Field	Communication Protocol	BPCS							
44	MOV-2856	MOV at the discharge of Wet crude oil circulation Pump –P 001C					Field	Communication Protocol	BPCS							
45	MOV-2857	MOV at the suction of Wet crude oil circulation Pump –P 001D					Field	Communication Protocol	BPCS							
46	MOV-2858	MOV at the discharge of Wet crude oil circulation Pump –P 001D					Field	Communication Protocol	BPCS							
DRY CRUDE OIL DESPATCH SYSTEM / TCE.7547A-300-PI-8032																

INPUT / OUTPUT LIST FOR BPCS

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	IO TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS											
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT															
47	MOV-3263	MOV at the suction of Dry crude oil dispatch Pumps –P 003A					Field	Communication Protocol	BPCS																		
48	MOV-3264	MOV at the discharge of Dry crude oil dispatch Pumps –P 003A					Field	Communication Protocol	BPCS																		
49	MOV-3265	MOV at the suction of Dry crude oil dispatch Pumps –P 003B					Field	Communication Protocol	BPCS																		
50	MOV-3266	MOV at the discharge of Dry crude oil dispatch Pumps –P 003B					Field	Communication Protocol	BPCS																		
51	MOV-3267	MOV at the suction of Dry crude oil dispatch Pumps –P 003C					Field	Communication Protocol	BPCS																		
52	MOV-3268	MOV at the discharge of Dry crude oil dispatch Pumps –P 003C					Field	Communication Protocol	BPCS																		
53	MOV-3269	MOV at the suction of Dry crude oil dispatch Pumps –P 003D					Field	Communication Protocol	BPCS																		
54	MOV-3270	MOV at the discharge of Dry crude oil dispatch Pumps –P 003D					Field	Communication Protocol	BPCS																		
										<table><tr><td>IO SUMMARY</td><td>ANALOG INPUT</td><td>ANALOG OUTPUT</td><td>DIGITAL INPUT</td><td>DIGITAL OUTPUT</td><td>FF</td></tr><tr><td>BPCS</td><td>-</td><td>-</td><td>26</td><td>13</td><td>96</td></tr></table>						IO SUMMARY	ANALOG INPUT	ANALOG OUTPUT	DIGITAL INPUT	DIGITAL OUTPUT	FF	BPCS	-	-	26	13	96
IO SUMMARY	ANALOG INPUT	ANALOG OUTPUT	DIGITAL INPUT	DIGITAL OUTPUT	FF																						
BPCS	-	-	26	13	96																						

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
STF INLET BATTERY LIMITS (CRUDE OIL AND NATURAL GAS) - TCE.7547A-300-PI-8020																
1	ZSO-2001	Open Limit switch for On - Off valve XSV-2001	XSV-2001	ESD-2201, 2001, 2003, 2004, 2005			Field	Pot. Free	DI							
2	ZSC-2001	Close Limit switch for On - Off valve XSV-2001	XSV-2001	ESD-2201, 2001, 2003, 2004,			Field	Pot. Free	DI							
3	SOV-2001	Solenoid Valve for On - Off valve XSV-2001	XSV-2001	ESD-2201, 2001, 2003, 2004,			Field	24 VDC	DO							
4	ZSO-2002	Open Limit switch for On - Off valve XSV-2002	XSV-2002	ESD-2201, 2001, 2003,2007,			Field	Pot. Free	DI							
5	ZSC-2002	Close Limit switch for On - Off valve XSV-2002	XSV-2002	ESD-2201, 2001, 2003,2007,			Field	Pot. Free	DI							
6	SOV-2002	Solenoid Valve for On - Off valve XSV-2002	XSV-2002	ESD-2201, 2001, 2003,2007,			Field	24 VDC	DO							
7	ZSO-2003	Open Limit switch for On - Off valve XSV-2003	XSV-2003	ESD-2201, 2001, 2003			Field	Pot. Free	DI							
8	ZSC-2003	Close Limit switch for On - Off valve XSV-2003	XSV-2003	ESD-2201, 2001, 2003			Field	Pot. Free	DI							
9	SOV-2003	Solenoid Valve for On - Off valve XSV-2003	XSV-2003	ESD-2201, 2001, 2003			Field	24 VDC	DO							
10	ZSO-2004	Open Limit switch for On - Off valve XSV-2004	XSV-2004	ESD-2201, 2001, 2003			Field	Pot. Free	DI							
11	ZSC-2004	Close Limit switch for On - Off valve XSV-2004	XSV-2004	ESD-2201, 2001, 2003			Field	Pot. Free	DI							
12	SOV-2004	Solenoid Valve for On - Off valve XSV-2004	XSV-2004	ESD-2201, 2001, 2003			Field	24 VDC	DO							
13	ZSO-2005	Open Limit switch for On - Off valve XSV-2005	XSV-2005	ESD-2201, 2001, 2003			Field	Pot. Free	DI							
14	ZSC-2005	Close Limit switch for On - Off valve XSV-2005	XSV-2005	ESD-2201, 2001, 2003			Field	Pot. Free	DI							
15	SOV-2005	Solenoid Valve for On - Off valve XSV-2005	XSV-2005	ESD-2201, 2001, 2003			Field	24 VDC	DO							
16	ZSO-2006	Open Limit switch for On - Off valve XSV-2006	XSV-2006	ESD-2201, 2001, 2003, 2010			Field	Pot. Free	DI							
17	ZSC-2006	Close Limit switch for On - Off valve XSV-2006	XSV-2006	ESD-2201, 2001, 2003, 2010			Field	Pot. Free	DI							
18	SOV-2006	Solenoid Valve for On - Off valve XSV-2006	XSV-2006	ESD-2201, 2001, 2003, 2010			Field	24 VDC	DO							
19	ZSO-2007	Open Limit switch for On - Off valve XSV-2007	XSV-2007	ESD-2201, 2001, 2003, 2011			Field	Pot. Free	DI							
20	ZSC-2007	Close Limit switch for On - Off valve XSV-2007	XSV-2007	ESD-2201, 2001, 2003, 2011			Field	Pot. Free	DI							
21	SOV-2007	Solenoid Valve for On - Off valve XSV-2007	XSV-2007	ESD-2201, 2001, 2003, 2011			Field	24 VDC	DO							
22	ZSO-2008	Open Limit switch for On - Off valve XSV-2008	XSV-2008	ESD-2201, 2001, 2002, 2003			Field	Pot. Free	DI							
23	ZSC-2008	Close Limit switch for On - Off valve XSV-2008	XSV-2008	ESD-2201, 2001, 2002, 2003			Field	Pot. Free	DI							
24	SOV-2008	Solenoid Valve for On - Off valve XSV-2008	XSV-2008	ESD-2201, 2001, 2002, 2003			Field	24 VDC	DO							
25	ZSO-2010	Open Limit switch for On - Off valve XSV-2010	XSV-2010	ESD-2010			Field	Pot. Free	DI							
26	ZSC-2010	Close Limit switch for On - Off valve XSV-2010	XSV-2010	ESD-2010			Field	Pot. Free	DI							
27	SOV-2010	Solenoid Valve for On - Off valve XSV-2010	XSV-2010	ESD-2010			Field	24 VDC	DO							
28	PT-2007	Pressure in the condensate oil header	PI-2007	ESD-2011			Field	4-20mA	AI	HOLD	-		HH, H, L			
29	PT-2008	Pressure in the Wet crude oil header	PI-2008	ESD-2004			Field	4-20mA	AI	HOLD	-		HH, H, L			
30	PT-2009	Pressure in the Wet crude oil header	PI-2009	ESD-2007			Field	4-20mA	AI	HOLD	-		HH, H, L			

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
31	PT-2010	Pressure in the Natural gas header	PI-2010				Field	4-20mA	AI	0 - 6	-	Kg/Cm2 (g)	H, L			
32	PT-2011	Pressure in the Natural gas header	PI-2011				Field	4-20mA	AI	0 - 6	-	Kg/Cm2 (g)	H, L			
33	TT-2005	Temperature Transmitter for TE-2005	TI-2005				Field	4-20mA	AI	0-AMB	-	Deg.Celsius				
34	TT-2006	Temperature Transmitter for TE-2006	TI-2006	ESD-2005			Field	4-20mA	AI	0-AMB	-	Deg.Celsius	LL			
35	TT-2007	Temperature Transmitter for TE-2007	TI-2007	ESD-2008			Field	4-20mA	AI	0-AMB	-	Deg.Celsius	LL			
36	TT-2008	Temperature Transmitter for TE-2008	TI-2008				Field	4-20mA	AI	0-AMB	-	Deg.Celsius				
37	TT-2009	Temperature Transmitter for TE-2009	TI-2009				Field	4-20mA	AI	0-AMB	-	Deg.Celsius				
38	LT-2002	Level in the Natural gas Knock out drum level V-001	LI-2002	ESD-2002			Field	4-20mA	AI	0 – 2040	-	MMWC	HH, LL			
WET CRUDE OIL PREHEATING - TCE.7547A-300-PI-8021																
39	ZSO-2101	Open Limit switch for On - Off valve XSV-2101	XSV-2101	ESD-2201			Field	Pot. Free	DI							
40	ZSC-2101	Close Limit switch for On - Off valve XSV-2101	XSV-2101	ESD-2201			Field	Pot. Free	DI							
41	SOV-2101	Solenoid Valve for On - Off valve XSV-2101	XSV-2101	ESD-2201			Field	24 VDC	DO							
42	ZSO-2108	Open Limit switch for On - Off valve XSV-2108	XSV-2108	ESD-2201			Field	Pot. Free	DI							
43	ZSC-2108	Close Limit switch for On - Off valve XSV-2108	XSV-2108	ESD-2201			Field	Pot. Free	DI							
44	SOV-2108	Solenoid Valve for On - Off valve XSV-2108	XSV-2108	ESD-2201			Field	24 VDC	DO							
45	ZSO-2104	Open Limit switch for On - Off valve XSV-2104	XSV-2104	ESD-2201			Field	Pot. Free	DI							
46	ZSC-2104	Close Limit switch for On - Off valve XSV-2104	XSV-2104	ESD-2201			Field	Pot. Free	DI							
47	SOV-2104	Solenoid Valve for On - Off valve XSV-2104	XSV-2104	ESD-2201			Field	24 VDC	DO							
48	ZSO-2105	Open Limit switch for On - Off valve XSV-2105	XSV-2105	ESD-2201			Field	Pot. Free	DI							
49	ZSC-2105	Close Limit switch for On - Off valve XSV-2105	XSV-2105	ESD-2201			Field	Pot. Free	DI							
50	SOV-2105	Solenoid Valve for On - Off valve XSV-2105	XSV-2105	ESD-2201			Field	24 VDC	DO							
51	ZSO-2106	Open Limit switch for On - Off valve XSV-2106	XSV-2106	ESD-2201			Field	Pot. Free	DI							
52	ZSC-2106	Close Limit switch for On - Off valve XSV-2106	XSV-2106	ESD-2201			Field	Pot. Free	DI							
53	SOV-2106	Solenoid Valve for On - Off valve XSV-2106	XSV-2106	ESD-2201			Field	24 VDC	DO							
54	ZSO-2107	Open Limit switch for On - Off valve XSV-2107	XSV-2107	ESD-2201			Field	Pot. Free	DI							
55	ZSC-2107	Close Limit switch for On - Off valve XSV-2107	XSV-2107	ESD-2201			Field	Pot. Free	DI							
56	SOV-2107	Solenoid Valve for On - Off valve XSV-2107	XSV-2107	ESD-2201			Field	24 VDC	DO							
CRUDE OIL STORAGE TANK (T-001) - TCE.7547A-300-PI-8022																
57	ZSO-2201	Open Limit switch for On - Off valve XSV-2201	XSV-2201	ESD-2201, 2202A, 2204			Field	Pot. Free	DI							
58	ZSC-2201	Close Limit switch for On - Off valve XSV-2201	XSV-2201	ESD-2201, 2202A, 2204			Field	Pot. Free	DI							
59	SOV-2201	Solenoid Valve for On - Off valve XSV-2201	XSV-2201	ESD-2201, 2202A, 2204			Field	24 VDC	DO							
60	ZSR-2201	Remote / Location Selection For XSV-2201 in Local control Panel Outside the dyke	XSV-2201				Field	Pot. Free	DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
61	ZSO-2202	Open Limit switch for On - Off valve XSV-2202	XSV-2202	ESD-2201, 2202A, 2204			Field	Pot. Free	DI							
62	ZSC-2202	Close Limit switch for On - Off valve XSV-2202	XSV-2202	ESD-2201, 2202A, 2204			Field	Pot. Free	DI							
63	SOV-2202	Solenoid Valve for On - Off valve XSV-2202	XSV-2202	ESD-2201, 2202A, 2204			Field	24 VDC	DO							
64	ZSR-2202	Remote / Location Selection For XSV-2202 in Local control Panel Outside the dyke	XSV-2202				Field	Pot. Free	DI							
65	ZSO-2203	Open Limit switch for On - Off valve XSV-2203	XSV-2203	ESD-2201, 2202B, 2204			Field	Pot. Free	DI							
66	ZSC-2203	Close Limit switch for On - Off valve XSV-2203	XSV-2203	ESD-2201, 2202B, 2204			Field	Pot. Free	DI							
67	SOV-2203	Solenoid Valve for On - Off valve XSV-2203	XSV-2203	ESD-2201, 2202B, 2204			Field	24 VDC	DO							
68	ZSR-2203	Remote / Location Selection For XSV-2203 in Local control Panel Outside the dyke	XSV-2203				Field	Pot. Free	DI							
69	ZSO-2204	Open Limit switch for On - Off valve XSV-2204	XSV-2204	ESD-2201, 2202B, 2204			Field	Pot. Free	DI							
70	ZSC-2204	Close Limit switch for On - Off valve XSV-2204	XSV-2204	ESD-2201, 2202B, 2204			Field	Pot. Free	DI							
71	SOV-2204	Solenoid Valve for On - Off valve XSV-2204	XSV-2204	ESD-2201, 2202B, 2204			Field	24 VDC	DO							
72	ZSR-2204	Remote / Location Selection For XSV-2204 in Local control Panel Outside the dyke	XSV-2204				Field	Pot. Free	DI							
73	ZSO-2205	Open Limit switch for On - Off valve XSV-2205	XSV-2205	ESD-2201, 2202B, 2204			Field	Pot. Free	DI							
74	ZSC-2205	Close Limit switch for On - Off valve XSV-2205	XSV-2205	ESD-2201, 2202B, 2204			Field	Pot. Free	DI							
75	SOV-2205	Solenoid Valve for On - Off valve XSV-2205	XSV-2205	ESD-2201, 2202B, 2204			Field	24 VDC	DO							
76	ZSR-2205	Remote / Location Selection For XSV-2205 in Local control Panel Outside the dyke	XSV-2205				Field	Pot. Free	DI							
77	ZSO-2206	Open Limit switch for On - Off valve XSV-2206	XSV-2206	ESD-2201, 2203			Field	Pot. Free	DI							
78	ZSC-2206	Close Limit switch for On - Off valve XSV-2206	XSV-2206	ESD-2201, 2203			Field	Pot. Free	DI							
79	SOV-2206	Solenoid Valve for On - Off valve XSV-2206	XSV-2206	ESD-2201, 2203			Field	24 VDC	DO							
80	TT-2203A	Temperature in the Wet crude oil storage Tank T-001	TI-2203A	ESD-2003			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
81	TT-2203B	Temperature in the Wet crude oil storage Tank T-001	TI-2203B	ESD-2003			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
82	TT-2203C	Temperature in the Wet crude oil storage Tank T-001	TI-2203C	ESD-2003			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
83	LSH-2201	Level in the Wet crude oil storage Tank T-001	LT-2201				Field	Pot. Free	DI				H			
84	LAHH-2203	Level in the Wet crude oil storage Tank T-001	LI-2202	ESD-2202A, 2202B			Field	Pot. Free	DI				HH			
85	LALL-2203	Level in the Wet crude oil storage Tank T-001	LI-2202	ESD-2202A, 2202B			Field	Pot. Free	DI				LL			
86	LSHHH-2202	Level in the Wet crude oil storage Tank T-001	LS-2202	ESD-2204			Field	Pot. Free	DI				HHH			
CRUDE OIL STORAGE TANK (T-002) - TCE.7547A-300-PI-8023																
87	ZSO-2301	Open Limit switch for On - Off valve XSV-2301	XSV-2301	ESD-2201, 2302A, 2304			Field	Pot. Free	DI							
88	ZSC-2301	Close Limit switch for On - Off valve XSV-2301	XSV-2301	ESD-2201, 2302A, 2304			Field	Pot. Free	DI							
89	SOV-2301	Solenoid Valve for On - Off valve XSV-2301	XSV-2301	ESD-2201, 2302A, 2304			Field	24 VDC	DO							
90	ZSR-2301	Remote / Location Selection For XSV-2301 in Local control Panel Outside the dyke	XSV-2301				Field	Pot. Free	DI							
91	ZSO-2302	Open Limit switch for On - Off valve XSV-2302	XSV-2302	ESD-2201, 2302A, 2304			Field	Pot. Free	DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
92	ZSC-2302	Close Limit switch for On - Off valve XSV-2302	XSV-2302	ESD-2201, 2302A, 2304			Field	Pot. Free	DI							
93	SOV-2302	Solenoid Valve for On - Off valve XSV-2302	XSV-2302	ESD-2201, 2302A, 2304			Field	24 VDC	DO							
94	ZSR-2302	Remote / Location Selection For XSV-2302 in Local control Panel Outside the dyke	XSV-2302				Field	Pot. Free	DI							
95	ZSO-2303	Open Limit switch for On - Off valve XSV-2303	XSV-2303	ESD-2201, 2302B, 2304			Field	Pot. Free	DI							
96	ZSC-2303	Close Limit switch for On - Off valve XSV-2303	XSV-2303	ESD-2201, 2302B, 2304			Field	Pot. Free	DI							
97	SOV-2303	Solenoid Valve for On - Off valve XSV-2303	XSV-2303	ESD-2201, 2302B, 2304			Field	24 VDC	DO							
98	ZSR-2303	Remote / Location Selection For XSV-2303 in Local control Panel Outside the dyke	XSV-2303				Field	Pot. Free	DI							
99	ZSO-2304	Open Limit switch for On - Off valve XSV-2304	XSV-2304	ESD-2201, 2302B, 2304			Field	Pot. Free	DI							
100	ZSC-2304	Close Limit switch for On - Off valve XSV-2304	XSV-2304	ESD-2201, 2302B, 2304			Field	Pot. Free	DI							
101	SOV-2304	Solenoid Valve for On - Off valve XSV-2304	XSV-2304	ESD-2201, 2302B, 2304			Field	24 VDC	DO							
102	ZSR-2304	Remote / Location Selection For XSV-2304 in Local control Panel Outside the dyke	XSV-2304				Field	Pot. Free	DI							
103	ZSO-2305	Open Limit switch for On - Off valve XSV-2305	XSV-2305	ESD-2201, 2302B, 2304			Field	Pot. Free	DI							
104	ZSC-2305	Close Limit switch for On - Off valve XSV-2305	XSV-2305	ESD-2201, 2302B, 2304			Field	Pot. Free	DI							
105	SOV-2305	Solenoid Valve for On - Off valve XSV-2305	XSV-2305	ESD-2201, 2302B, 2304			Field	24 VDC	DO							
106	ZSR-2305	Remote / Location Selection For XSV-2305 in Local control Panel Outside the dyke	XSV-2305				Field	Pot. Free	DI							
107	ZSO-2306	Open Limit switch for On - Off valve XSV-2306	XSV-2306	ESD-2201, 2303			Field	Pot. Free	DI							
108	ZSC-2306	Close Limit switch for On - Off valve XSV-2306	XSV-2306	ESD-2201, 2303			Field	Pot. Free	DI							
109	SOV-2306	Solenoid Valve for On - Off valve XSV-2306	XSV-2306	ESD-2201, 2303			Field	24 VDC	DO							
110	TT-2303A	Temperature in the Wet crude oil storage Tank T-002	TI-2303A	ESD-2303			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
111	TT-2303B	Temperature in the Wet crude oil storage Tank T-002	TI-2303B	ESD-2303			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
112	TT-2303C	Temperature in the Wet crude oil storage Tank T-002	TI-2303C	ESD-2303			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
113	LSH-2301	Level in the Wet crude oil storage Tank T-002	LT-2301				Field	Pot. Free	DI				H			
114	LAHH-2303	Level in the Wet crude oil storage Tank T-002	LI-2302	ESD-2302A, 2302B			Field	Pot. Free	DI				HH			
115	LALL-2303	Level in the Wet crude oil storage Tank T-002	LI-2302	ESD-2302A, 2302B			Field	Pot. Free	DI				LL			
116	LSHHH-2302	Level in the Wet crude oil storage Tank T-002	LS-2302	ESD-2304			Field	Pot. Free	DI				HHH			
CRUDE OIL STORAGE TANK (T-003) - TCE.7547A-300-PI-8024																
117	ZSO-2401	Open Limit switch for On - Off valve XSV-2401	XSV-2401	ESD-2201, 2402A, 2404			Field	Pot. Free	DI							
118	ZSC-2401	Close Limit switch for On - Off valve XSV-2401	XSV-2401	ESD-2201, 2402A, 2404			Field	Pot. Free	DI							
119	SOV-2401	Solenoid Valve for On - Off valve XSV-2401	XSV-2401	ESD-2201, 2402A, 2404			Field	24 VDC	DO							
120	ZSR-2401	Remote / Location Selection For XSV-2401 in Local control Panel Outside the dyke	XSV-2401				Field	Pot. Free	DI							
121	ZSO-2402	Open Limit switch for On - Off valve XSV-2402	XSV-2402	ESD-2201, 2402A, 2404			Field	Pot. Free	DI							
122	ZSC-2402	Close Limit switch for On - Off valve XSV-2402	XSV-2402	ESD-2201, 2402A, 2404			Field	Pot. Free	DI							



SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
123	SOV-2402	Solenoid Valve for On - Off valve XSV-2402	XSV-2402	ESD-2201, 2402A, 2404			Field	24 VDC	DO							
124	ZSR-2402	Remote / Location Selection For XSV-2402 in Local control Panel Outside the dyke	XSV-2402				Field	Pot. Free	DI							
125	ZSO-2403	Open Limit switch for On - Off valve XSV-2403	XSV-2403	ESD-2201, 2402B, 2404			Field	Pot. Free	DI							
126	ZSC-2403	Close Limit switch for On - Off valve XSV-2403	XSV-2403	ESD-2201, 2402B, 2404			Field	Pot. Free	DI							
127	SOV-2403	Solenoid Valve for On - Off valve XSV-2403	XSV-2403	ESD-2201, 2402B, 2404			Field	24 VDC	DO							
128	ZSR-2403	Remote / Location Selection For XSV-2403 in Local control Panel Outside the dyke	XSV-2403				Field	Pot. Free	DI							
129	ZSO-2404	Open Limit switch for On - Off valve XSV-2404	XSV-2404	ESD-2201, 2402B, 2404			Field	Pot. Free	DI							
130	ZSC-2404	Close Limit switch for On - Off valve XSV-2404	XSV-2404	ESD-2201, 2402B, 2404			Field	Pot. Free	DI							
131	SOV-2404	Solenoid Valve for On - Off valve XSV-2404	XSV-2404	ESD-2201, 2402B, 2404			Field	24 VDC	DO							
132	ZSR-2404	Remote / Location Selection For XSV-2404 in Local control Panel Outside the dyke	XSV-2404				Field	Pot. Free	DI							
133	ZSO-2405	Open Limit switch for On - Off valve XSV-2405	XSV-2405	ESD-2201, 2402B, 2404			Field	Pot. Free	DI							
134	ZSC-2405	Close Limit switch for On - Off valve XSV-2405	XSV-2405	ESD-2201, 2402B, 2404			Field	Pot. Free	DI							
135	SOV-2405	Solenoid Valve for On - Off valve XSV-2405	XSV-2405	ESD-2201, 2402B, 2404			Field	24 VDC	DO							
136	ZSR-2405	Remote / Location Selection For XSV-2405 in Local control Panel Outside the dyke	XSV-2405				Field	Pot. Free	DI							
137	ZSO-2406	Open Limit switch for On - Off valve XSV-2406	XSV-2406	ESD-2201, 2403			Field	Pot. Free	DI							
138	ZSC-2406	Close Limit switch for On - Off valve XSV-2406	XSV-2406	ESD-2201, 2403			Field	Pot. Free	DI							
139	SOV-2406	Solenoid Valve for On - Off valve XSV-2406	XSV-2406	ESD-2201, 2403			Field	24 VDC	DO							
140	TT-2403A	Temperature in the Wet crude oil storage Tank T-003	TI-2403A	ESD-2403			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
141	TT-2403B	Temperature in the Wet crude oil storage Tank T-003	TI-2403B	ESD-2403			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
142	TT-2403C	Temperature in the Wet crude oil storage Tank T-003	TI-2403C	ESD-2403			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
143	LSH-2401	Level in the Wet crude oil storage Tank T-003	LT-2401				Field	Pot. Free	DI				H			
144	LAHH-2403	Level in the Wet crude oil storage Tank T-003	LI-2402	ESD-2402A, 2402B			Field	Pot. Free	DI				HH			
145	LALL-2403	Level in the Wet crude oil storage Tank T-003	LI-2402	ESD-2402A, 2402B			Field	Pot. Free	DI				LL			
146	LSHHH-2402	Level in the Wet crude oil storage Tank T-003	LS-2402	ESD-2404			Field	Pot. Free	DI				HHH			
CRUDE OIL STORAGE TANK (T-004) - TCE.7547A-300-PI-8025																
147	ZSO-2501	Open Limit switch for On - Off valve XSV-2501	XSV-2501	ESD-2201, 2502A, 2504			Field	Pot. Free	DI							
148	ZSC-2501	Close Limit switch for On - Off valve XSV-2501	XSV-2501	ESD-2201, 2502A, 2504			Field	Pot. Free	DI							
149	SOV-2501	Solenoid Valve for On - Off valve XSV-2501	XSV-2501	ESD-2201, 2502A, 2504			Field	24 VDC	DO							
150	ZSR-2501	Remote / Location Selection For XSV-2501 in Local control Panel Outside the dyke	XSV-2501				Field	Pot. Free	DI							
151	ZSO-2502	Open Limit switch for On - Off valve XSV-2502	XSV-2502	ESD-2201, 2502A, 2504			Field	Pot. Free	DI							
152	ZSC-2502	Close Limit switch for On - Off valve XSV-2502	XSV-2502	ESD-2201, 2502A, 2504			Field	Pot. Free	DI							
153	SOV-2502	Solenoid Valve for On - Off valve XSV-2502	XSV-2502	ESD-2201, 2502A, 2504			Field	24 VDC	DO							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
154	ZSR-2502	Remote / Location Selection For XSV-2502 in Local control Panel Outside the dyke	XSV-2502				Field	Pot. Free	DI							
155	ZSO-2503	Open Limit switch for On - Off valve XSV-2503	XSV-2503	ESD-2201, 2502B, 2504			Field	Pot. Free	DI							
156	ZSC-2503	Close Limit switch for On - Off valve XSV-2503	XSV-2503	ESD-2201, 2502B, 2504			Field	Pot. Free	DI							
157	SOV-2503	Solenoid Valve for On - Off valve XSV-2503	XSV-2503	ESD-2201, 2502B, 2504			Field	24 VDC	DO							
158	ZSR-2503	Remote / Location Selection For XSV-2503 in Local control Panel Outside the dyke	XSV-2503				Field	Pot. Free	DI							
159	ZSO-2504	Open Limit switch for On - Off valve XSV-2504	XSV-2504	ESD-2201, 2502B, 2504			Field	Pot. Free	DI							
160	ZSC-2504	Close Limit switch for On - Off valve XSV-2504	XSV-2504	ESD-2201, 2502B, 2504			Field	Pot. Free	DI							
161	SOV-2504	Solenoid Valve for On - Off valve XSV-2504	XSV-2504	ESD-2201, 2502B, 2504			Field	24 VDC	DO							
162	ZSR-2504	Remote / Location Selection For XSV-2504 in Local control Panel Outside the dyke	XSV-2504				Field	Pot. Free	DI							
163	ZSO-2505	Open Limit switch for On - Off valve XSV-2505	XSV-2505	ESD-2201, 2502B, 2504			Field	Pot. Free	DI							
164	ZSC-2505	Close Limit switch for On - Off valve XSV-2505	XSV-2505	ESD-2201, 2502B, 2504			Field	Pot. Free	DI							
165	SOV-2505	Solenoid Valve for On - Off valve XSV-2505	XSV-2505	ESD-2201, 2502B, 2504			Field	24 VDC	DO							
166	ZSR-2505	Remote / Location Selection For XSV-2505 in Local control Panel Outside the dyke	XSV-2505				Field	Pot. Free	DI							
167	ZSO-2506	Open Limit switch for On - Off valve XSV-2506	XSV-2506	ESD-2201, 2503			Field	Pot. Free	DI							
168	ZSC-2506	Close Limit switch for On - Off valve XSV-2506	XSV-2506	ESD-2201, 2503			Field	Pot. Free	DI							
169	SOV-2506	Solenoid Valve for On - Off valve XSV-2506	XSV-2506	ESD-2201, 2503			Field	24 VDC	DO							
170	TT-2503A	Temperature in the Wet crude oil storage Tank T-004	TI-2503A	ESD-2503			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
171	TT-2503B	Temperature in the Wet crude oil storage Tank T-004	TI-2503B	ESD-2503			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
172	TT-2503C	Temperature in the Wet crude oil storage Tank T-004	TI-2503C	ESD-2503			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
173	LSH-2501	Level in the Wet crude oil storage Tank T-004	LT-2501				Field	Pot. Free	DI				H			
174	LAHH-2503	Level in the Wet crude oil storage Tank T-004	LI-2502	ESD-2502A, 2502B			Field	Pot. Free	DI				HH			
175	LALL-2503	Level in the Wet crude oil storage Tank T-004	LI-2502	ESD-2502A, 2502B			Field	Pot. Free	DI				LL			
176	LSHHH-2502	Level in the Wet crude oil storage Tank T-004	LS-2502	ESD-2504			Field	Pot. Free	DI				HHH			
CRUDE OIL STORAGE TANK (T-005) - TCE.7547A-300-PI-8026																
177	ZSO-2601	Open Limit switch for On - Off valve XSV-2601	XSV-2601	ESD-2201, 2602A, 2604			Field	Pot. Free	DI							
178	ZSC-2601	Close Limit switch for On - Off valve XSV-2601	XSV-2601	ESD-2201, 2602A, 2604			Field	Pot. Free	DI							
179	SOV-2601	Solenoid Valve for On - Off valve XSV-2601	XSV-2601	ESD-2201, 2602A, 2604			Field	24 VDC	DO							
180	ZSR-2601	Remote / Location Selection For XSV-2601 in Local control Panel Outside the dyke	XSV-2601				Field	Pot. Free	DI							
181	ZSO-2602	Open Limit switch for On - Off valve XSV-2602	XSV-2602	ESD-2201, 2602A, 2604			Field	Pot. Free	DI							
182	ZSC-2602	Close Limit switch for On - Off valve XSV-2602	XSV-2602	ESD-2201, 2602A, 2604			Field	Pot. Free	DI							
183	SOV-2602	Solenoid Valve for On - Off valve XSV-2602	XSV-2602	ESD-2201, 2602A, 2604			Field	24 VDC	DO							
184	ZSR-2602	Remote / Location Selection For XSV-2602 in Local control Panel Outside the dyke	XSV-2602				Field	Pot. Free	DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
185	ZSO-2603	Open Limit switch for On - Off valve XSV-2603	XSV-2603	ESD-2201, 2602B, 2604			Field	Pot. Free	DI							
186	ZSC-2603	Close Limit switch for On - Off valve XSV-2603	XSV-2603	ESD-2201, 2602B, 2604			Field	Pot. Free	DI							
187	SOV-2603	Solenoid Valve for On - Off valve XSV-2603	XSV-2603	ESD-2201, 2602B, 2604			Field	24 VDC	DO							
188	ZSR-2603	Remote / Location Selection For XSV-2603 in Local control Panel Outside the dyke	XSV-2603				Field	Pot. Free	DI							
189	ZSO-2604	Open Limit switch for On - Off valve XSV-2604	XSV-2604	ESD-2201, 2602B, 2604			Field	Pot. Free	DI							
190	ZSC-2604	Close Limit switch for On - Off valve XSV-2604	XSV-2604	ESD-2201, 2602B, 2604			Field	Pot. Free	DI							
191	SOV-2604	Solenoid Valve for On - Off valve XSV-2604	XSV-2604	ESD-2201, 2602B, 2604			Field	24 VDC	DO							
192	ZSR-2604	Remote / Location Selection For XSV-2604 in Local control Panel Outside the dyke	XSV-2604				Field	Pot. Free	DI							
193	ZSO-2605	Open Limit switch for On - Off valve XSV-2605	XSV-2605	ESD-2201, 2602B, 2604			Field	Pot. Free	DI							
194	ZSC-2605	Close Limit switch for On - Off valve XSV-2605	XSV-2605	ESD-2201, 2602B, 2604			Field	Pot. Free	DI							
195	SOV-2605	Solenoid Valve for On - Off valve XSV-2605	XSV-2605	ESD-2201, 2602B, 2604			Field	24 VDC	DO							
196	ZSR-2605	Remote / Location Selection For XSV-2605 in Local control Panel Outside the dyke	XSV-2605				Field	Pot. Free	DI							
197	ZSO-2606	Open Limit switch for On - Off valve XSV-2606	XSV-2606	ESD-2201, 2603			Field	Pot. Free	DI							
198	ZSC-2606	Close Limit switch for On - Off valve XSV-2606	XSV-2606	ESD-2201, 2603			Field	Pot. Free	DI							
199	SOV-2606	Solenoid Valve for On - Off valve XSV-2606	XSV-2606	ESD-2201, 2603			Field	24 VDC	DO							
200	TT-2603A	Temperature in the Wet crude oil storage Tank T-005	TI-2603A	ESD-2603			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
201	TT-2603B	Temperature in the Wet crude oil storage Tank T-005	TI-2603B	ESD-2603			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
202	TT-2603C	Temperature in the Wet crude oil storage Tank T-005	TI-2603C	ESD-2603			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
203	LSH-2601	Level in the Wet crude oil storage Tank T-005	LT-2601				Field	Pot. Free	DI				H			
204	LAHH-2603	Level in the Wet crude oil storage Tank T-005	LI-2602	ESD-2602A, 2602B			Field	Pot. Free	DI				HH			
205	LALL-2603	Level in the Wet crude oil storage Tank T-005	LI-2602	ESD-2602A, 2602B			Field	Pot. Free	DI				LL			
206	LSHHH-2602	Level in the Wet crude oil storage Tank T-005	LS-2602	ESD-2604			Field	Pot. Free	DI				HHH			
CRUDE OIL STORAGE TANK (T-006) - TCE.7547A-300-PI-8027																
207	ZSO-2701	Open Limit switch for On - Off valve XSV-2701	XSV-2701				Field	Pot. Free	DI							
208	ZSC-2701	Close Limit switch for On - Off valve XSV-2701	XSV-2701				Field	Pot. Free	DI							
209	SOV-2701	Solenoid Valve for On - Off valve XSV-2701	XSV-2701	ESD-2201, 2702A. 2704			Field	24 VDC	DO							
210	ZSR-2701	Remote / Location Selection For XSV-2701 in Local control Panel Outside the dyke	XSV-2701				Field	Pot. Free	DI							
211	ZSO-2702	Open Limit switch for On - Off valve XSV-2702	XSV-2702	ESD-2201, 2702A. 2704			Field	Pot. Free	DI							
212	ZSC-2702	Close Limit switch for On - Off valve XSV-2702	XSV-2702	ESD-2201, 2702A. 2704			Field	Pot. Free	DI							
213	SOV-2702	Solenoid Valve for On - Off valve XSV-2702	XSV-2702	ESD-2201, 2702A. 2704			Field	24 VDC	DO							
214	ZSR-2702	Remote / Location Selection For XSV-2702 in Local control Panel Outside the dyke	XSV-2702				Field	Pot. Free	DI							
215	ZSO-2703	Open Limit switch for On - Off valve XSV-2703	XSV-2703	ESD-2201, 2702B, 2704			Field	Pot. Free	DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
216	ZSC-2703	Close Limit switch for On - Off valve XSV-2703	XSV-2703	ESD-2201, 2702B, 2704			Field	Pot. Free	DI							
217	SOV-2703	Solenoid Valve for On - Off valve XSV-2703	XSV-2703	ESD-2201, 2702B, 2704			Field	24 VDC	DO							
218	ZSR-2703	Remote / Location Selection For XSV-2703 in Local control Panel Outside the dyke	XSV-2703				Field	Pot. Free	DI							
219	ZSO-2704	Open Limit switch for On - Off valve XSV-2704	XSV-2704	ESD-2201, 2702B, 2704			Field	Pot. Free	DI							
220	ZSC-2704	Close Limit switch for On - Off valve XSV-2704	XSV-2704	ESD-2201, 2702B, 2704			Field	Pot. Free	DI							
221	SOV-2704	Solenoid Valve for On - Off valve XSV-2704	XSV-2704	ESD-2201, 2702B, 2704			Field	24 VDC	DO							
222	ZSR-2704	Remote / Location Selection For XSV-2704 in Local control Panel Outside the dyke	XSV-2704				Field	Pot. Free	DI							
223	ZSO-2705	Open Limit switch for On - Off valve XSV-2705	XSV-2705	ESD-2201, 2702B, 2704			Field	Pot. Free	DI							
224	ZSC-2705	Close Limit switch for On - Off valve XSV-2705	XSV-2705	ESD-2201, 2702B, 2704			Field	Pot. Free	DI							
225	SOV-2705	Solenoid Valve for On - Off valve XSV-2705	XSV-2705	ESD-2201, 2702B, 2704			Field	24 VDC	DO							
226	ZSR-2705	Remote / Location Selection For XSV-2705 in Local control Panel Outside the dyke	XSV-2705				Field	Pot. Free	DI							
227	ZSO-2706	Open Limit switch for On - Off valve XSV-2706	XSV-2706	ESD-2201, 2703			Field	Pot. Free	DI							
228	ZSC-2706	Close Limit switch for On - Off valve XSV-2706	XSV-2706	ESD-2201, 2703			Field	Pot. Free	DI							
229	SOV-2706	Solenoid Valve for On - Off valve XSV-2706	XSV-2706	ESD-2201, 2703			Field	24 VDC	DO							
230	TT-2703A	Temperature in the Wet crude oil storage Tank T-006	TI-2703A	ESD-2703			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
231	TT-2703B	Temperature in the Wet crude oil storage Tank T-006	TI-2703B	ESD-2703			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
232	TT-2703C	Temperature in the Wet crude oil storage Tank T-006	TI-2703C	ESD-2703			Field	4-20mA	AI	0-45		Deg.Celsius	HH, LL			
233	LSH-2701	Level in the Wet crude oil storage Tank T-006	LT-2701				Field	Pot. Free	DI				H			
234	LAHH-2703	Level in the Wet crude oil storage Tank T-006	LI-2702	ESD-2702A, 2702B			Field	Pot. Free	DI				HH			
235	LALL-2703	Level in the Wet crude oil storage Tank T-006	LI-2702	ESD-2702A, 2702B			Field	Pot. Free	DI				LL			
236	LSHHH-2702	Level in the Wet crude oil storage Tank T-006	LS-2702	ESD-2704			Field	Pot. Free	DI				HHH			
CRUDE OIL CIRCULATION PUMPS AND ACCUMULATED WATER TRANSFER PUMPS - TCE.7547A-300-PI-8028																
237	ZSO-2801	Open Limit switch for On - Off valve XSV-2801	XSV-2801	ESD-2201			Field	Pot. Free	DI							
238	ZSC-2801	Close Limit switch for On - Off valve XSV-2801	XSV-2801	ESD-2201			Field	Pot. Free	DI							
239	SOV-2801	Solenoid Valve for On - Off valve XSV-2801	XSV-2801	ESD-2201			Field	24 VDC	DO							
240	ZSO-2802	Open Limit switch for On - Off valve XSV-2802	XSV-2802	ESD-2201			Field	Pot. Free	DI							
241	ZSC-2802	Close Limit switch for On - Off valve XSV-2802	XSV-2802	ESD-2201			Field	Pot. Free	DI							
242	SOV-2802	Solenoid Valve for On - Off valve XSV-2802	XSV-2802	ESD-2201			Field	24 VDC	DO							
243	ZSO-2803	Open Limit switch for On - Off valve XSV-2803	XSV-2803	ESD-2201			Field	Pot. Free	DI							
244	ZSC-2803	Close Limit switch for On - Off valve XSV-2803	XSV-2803	ESD-2201			Field	Pot. Free	DI							
245	SOV-2803	Solenoid Valve for On - Off valve XSV-2803	XSV-2803	ESD-2201			Field	24 VDC	DO							
246	ZSO-2804	Open Limit switch for On - Off valve XSV-2804	XSV-2804	ESD-2201			Field	Pot. Free	DI							

INPUT / OUTPUT LIST FOR ESD

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
247	ZSC-2804	Close Limit switch for On - Off valve XSV-2804	XSV-2804	ESD-2201			Field	Pot. Free	DI							
248	SOV-2804	Solenoid Valve for On - Off valve XSV-2804	XSV-2804	ESD-2201			Field	24 VDC	DO							
249	ZSO-2805	Open Limit switch for On - Off valve XSV-2805	XSV-2805	ESD-2201			Field	Pot. Free	DI							
250	ZSC-2805	Close Limit switch for On - Off valve XSV-2805	XSV-2805	ESD-2201			Field	Pot. Free	DI							
251	SOV-2805	Solenoid Valve for On - Off valve XSV-2805	XSV-2805	ESD-2201			Field	24 VDC	DO							
252	ZSO-2806	Open Limit switch for On - Off valve XSV-2806	XSV-2806	ESD-2201			Field	Pot. Free	DI							
253	ZSC-2806	Close Limit switch for On - Off valve XSV-2806	XSV-2806	ESD-2201			Field	Pot. Free	DI							
254	SOV-2806	Solenoid Valve for On - Off valve XSV-2806	XSV-2806	ESD-2201			Field	24 VDC	DO							
255	ZSO-2807	Open Limit switch for On - Off valve XSV-2807	XSV-2807	ESD-2201			Field	Pot. Free	DI							
256	ZSC-2807	Close Limit switch for On - Off valve XSV-2807	XSV-2807	ESD-2201			Field	Pot. Free	DI							
257	SOV-2807	Solenoid Valve for On - Off valve XSV-2807	XSV-2807	ESD-2201			Field	24 VDC	DO							
258	ZSO-2808	Open Limit switch for On - Off valve XSV-2808	XSV-2808	ESD-2201			Field	Pot. Free	DI							
259	ZSC-2808	Close Limit switch for On - Off valve XSV-2808	XSV-2808	ESD-2201			Field	Pot. Free	DI							
260	SOV-2808	Solenoid Valve for On - Off valve XSV-2808	XSV-2808	ESD-2201			Field	24 VDC	DO							
261	ZSO-2809	Open Limit switch for On - Off valve XSV-2809	XSV-2809	ESD-2201			Field	Pot. Free	DI							
262	ZSC-2809	Close Limit switch for On - Off valve XSV-2809	XSV-2809	ESD-2201			Field	Pot. Free	DI							
263	SOV-2809	Solenoid Valve for On - Off valve XSV-2809	XSV-2809	ESD-2201			Field	24 VDC	DO							
264	ZSO-2810	Open Limit switch for On - Off valve XSV-2810	XSV-2810	ESD-2201			Field	Pot. Free	DI							
265	ZSC-2810	Close Limit switch for On - Off valve XSV-2810	XSV-2810	ESD-2201			Field	Pot. Free	DI							
266	SOV-2810	Solenoid Valve for On - Off valve XSV-2810	XSV-2810	ESD-2201			Field	24 VDC	DO							
267	ZSO-2811	Open Limit switch for On - Off valve XSV-2811	XSV-2811	ESD-2201			Field	Pot. Free	DI							
268	ZSC-2811	Close Limit switch for On - Off valve XSV-2811	XSV-2811	ESD-2201			Field	Pot. Free	DI							
269	SOV-2811	Solenoid Valve for On - Off valve XSV-2811	XSV-2811	ESD-2201			Field	24 VDC	DO							
270	ZSO-2812	Open Limit switch for On - Off valve XSV-2812	XSV-2812	ESD-2201			Field	Pot. Free	DI							
271	ZSC-2812	Close Limit switch for On - Off valve XSV-2812	XSV-2812	ESD-2201			Field	Pot. Free	DI							
272	SOV-2812	Solenoid Valve for On - Off valve XSV-2812	XSV-2812	ESD-2201			Field	24 VDC	DO							
273	ZSO-2813	Open Limit switch for On - Off valve XSV-2813	XSV-2801	ESD-2201			Field	Pot. Free	DI							
274	ZSC-2813	Close Limit switch for On - Off valve XSV-2813	XSV-2801	ESD-2201			Field	Pot. Free	DI							
275	SOV-2813	Solenoid Valve for On - Off valve XSV-2813	XSV-2801	ESD-2201			Field	24 VDC	DO							
276	ZSO-2814	Open Limit switch for On - Off valve XSV-2814	XSV-2814	ESD-2201			Field	Pot. Free	DI							
277	ZSC-2814	Close Limit switch for On - Off valve XSV-2814	XSV-2814	ESD-2201			Field	Pot. Free	DI							
278	SOV-2814	Solenoid Valve for On - Off valve XSV-2814	XSV-2814	ESD-2201			Field	24 VDC	DO							

INPUT / OUTPUT LIST FOR ESD

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
INDIRECT BATH HEATER (BH-002A/B/C/D) - TCE.7547A-300-PI-8029																
279	ZSO-2909	Open Limit switch for On - Off valve XSV-2909	XSV-2909	ESD-2201			Field	Pot. Free	DI							
280	ZSC-2909	Close Limit switch for On - Off valve XSV-2909	XSV-2909	ESD-2201			Field	Pot. Free	DI							
281	SOV-2909	Solenoid Valve for On - Off valve XSV-2909	XSV-2909	ESD-2201			Field	24 VDC	DO							
282	ZSO-2910	Open Limit switch for On - Off valve XSV-2910	XSV-2910	ESD-2201			Field	Pot. Free	DI							
283	ZSC-2910	Close Limit switch for On - Off valve XSV-2910	XSV-2910	ESD-2201			Field	Pot. Free	DI							
284	SOV-2910	Solenoid Valve for On - Off valve XSV-2910	XSV-2910	ESD-2201			Field	24 VDC	DO							
285	ZSO-2901	Open Limit switch for On - Off valve XSV-2901	XSV-2901	ESD-2201			Field	Pot. Free	DI							
286	ZSC-2901	Close Limit switch for On - Off valve XSV-2901	XSV-2901	ESD-2201			Field	Pot. Free	DI							
287	SOV-2901	Solenoid Valve for On - Off valve XSV-2901	XSV-2901	ESD-2201			Field	24 VDC	DO							
288	ZSO-2902	Open Limit switch for On - Off valve XSV-2902	XSV-2902	ESD-2201			Field	Pot. Free	DI							
289	ZSC-2902	Close Limit switch for On - Off valve XSV-2902	XSV-2902	ESD-2201			Field	Pot. Free	DI							
290	SOV-2902	Solenoid Valve for On - Off valve XSV-2902	XSV-2902	ESD-2201			Field	24 VDC	DO							
291	ZSO-2903	Open Limit switch for On - Off valve XSV-2903	XSV-2909	ESD-2201			Field	Pot. Free	DI							
292	ZSC-2903	Close Limit switch for On - Off valve XSV-2903	XSV-2909	ESD-2201			Field	Pot. Free	DI							
293	SOV-2903	Solenoid Valve for On - Off valve XSV-2903	XSV-2909	ESD-2201			Field	24 VDC	DO							
294	ZSO-2904	Open Limit switch for On - Off valve XSV-2904	XSV-2909	ESD-2201			Field	Pot. Free	DI							
295	ZSC-2904	Close Limit switch for On - Off valve XSV-2904	XSV-2909	ESD-2201			Field	Pot. Free	DI							
296	SOV-2904	Solenoid Valve for On - Off valve XSV-2904	XSV-2909	ESD-2201			Field	24 VDC	DO							
297	ZSO-2911	Open Limit switch for On - Off valve XSV-2911	XSV-2911	ESD-2201			Field	Pot. Free	DI							
298	ZSC-2911	Close Limit switch for On - Off valve XSV-2911	XSV-2911	ESD-2201			Field	Pot. Free	DI							
299	SOV-2911	Solenoid Valve for On - Off valve XSV-2911	XSV-2911	ESD-2201			Field	24 VDC	DO							
300	ZSO-2912	Open Limit switch for On - Off valve XSV-2912	XSV-2912	ESD-2201			Field	Pot. Free	DI							
301	ZSC-2912	Close Limit switch for On - Off valve XSV-2912	XSV-2912	ESD-2201			Field	Pot. Free	DI							
302	SOV-2912	Solenoid Valve for On - Off valve XSV-2912	XSV-2912	ESD-2201			Field	24 VDC	DO							
303	ZSO-2905	Open Limit switch for On - Off valve XSV-2905	XSV-2905	ESD-2201			Field	Pot. Free	DI							
304	ZSC-2905	Close Limit switch for On - Off valve XSV-2905	XSV-2905	ESD-2201			Field	Pot. Free	DI							
305	SOV-2905	Solenoid Valve for On - Off valve XSV-2905	XSV-2905	ESD-2201			Field	24 VDC	DO							
306	ZSO-2906	Open Limit switch for On - Off valve XSV-2906	XSV-2906	ESD-2201			Field	Pot. Free	DI							
307	ZSC-2906	Close Limit switch for On - Off valve XSV-2906	XSV-2906	ESD-2201			Field	Pot. Free	DI							
308	SOV-2906	Solenoid Valve for On - Off valve XSV-2906	XSV-2906	ESD-2201			Field	24 VDC	DO							
309	ZSO-2907	Open Limit switch for On - Off valve XSV-2907	XSV-2907	ESD-2201			Field	Pot. Free	DI							

INPUT / OUTPUT LIST FOR ESD																
SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
310	ZSC-2907	Close Limit switch for On - Off valve XSV-2907	XSV-2907	ESD-2201			Field	Pot. Free	DI							
311	SOV-2907	Solenoid Valve for On - Off valve XSV-2907	XSV-2907	ESD-2201			Field	24 VDC	DO							
312	ZSO-2908	Open Limit switch for On - Off valve XSV-2908	XSV-2908	ESD-2201			Field	Pot. Free	DI							
313	ZSC-2908	Close Limit switch for On - Off valve XSV-2908	XSV-2908	ESD-2201			Field	Pot. Free	DI							
314	SOV-2908	Solenoid Valve for On - Off valve XSV-2908	XSV-2908	ESD-2201			Field	24 VDC	DO							
ELECTROSTATIC EMULSION TREATER (EET-001A/B) - TCE.7547A-300-PI-8030																
315	ZSO-3003	Open Limit switch for On - Off valve XSV-3003	XSV-3003	ESD-2201			Field	Pot. Free	DI							
316	ZSC-3003	Close Limit switch for On - Off valve XSV-3003	XSV-3003	ESD-2201			Field	Pot. Free	DI							
317	SOV-3003	Solenoid Valve for On - Off valve XSV-3003	XSV-3003	ESD-2201			Field	24 VDC	DO							
318	ZSO-3005	Open Limit switch for On - Off valve XSV-3005	XSV-3005	ESD-2201			Field	Pot. Free	DI							
319	ZSC-3005	Close Limit switch for On - Off valve XSV-3005	XSV-3005	ESD-2201			Field	Pot. Free	DI							
320	SOV-3005	Solenoid Valve for On - Off valve XSV-3005	XSV-3005	ESD-2201			Field	24 VDC	DO							
321	ZSO-3007	Open Limit switch for On - Off valve XSV-3007	XSV-3007	ESD-2201			Field	Pot. Free	DI							
322	ZSC-3007	Close Limit switch for On - Off valve XSV-3007	XSV-3007	ESD-2201			Field	Pot. Free	DI							
323	SOV-3007	Solenoid Valve for On - Off valve XSV-3007	XSV-3007	ESD-2201			Field	24 VDC	DO							
324	ZSO-3004	Open Limit switch for On - Off valve XSV-3004	XSV-3004	ESD-2201			Field	Pot. Free	DI							
325	ZSC-3004	Close Limit switch for On - Off valve XSV-3004	XSV-3004	ESD-2201			Field	Pot. Free	DI							
326	SOV-3004	Solenoid Valve for On - Off valve XV-3004	XSV-3004	ESD-2201			Field	24 VDC	DO							
327	ZSO-3006	Open Limit switch for On - Off valve XSV-3006	XSV-3006	ESD-2201			Field	Pot. Free	DI							
328	ZSC-3006	Close Limit switch for On - Off valve XSV-3006	XSV-3006	ESD-2201			Field	Pot. Free	DI							
329	SOV-3006	Solenoid Valve for On - Off valve XSV-3006	XSV-3006	ESD-2201			Field	24 VDC	DO							
330	ZSO-3008	Open Limit switch for On - Off valve XSV-3008	XSV-3008	ESD-2201			Field	Pot. Free	DI							
331	ZSC-3008	Close Limit switch for On - Off valve XSV-3008	XSV-3008	ESD-2201			Field	Pot. Free	DI							
332	SOV-3008	Solenoid Valve for On - Off valve XSV-3008	XSV-3008	ESD-2201			Field	24 VDC	DO							
ELECTROSTATIC EMULSION TREATER (EET-001C/D) - TCE.7547A-300-PI-8031																
333	ZSO-3103	Open Limit switch for On - Off valve XSV-3103	XSV-3103	ESD-2201			Field	Pot. Free	DI							
334	ZSC-3103	Close Limit switch for On - Off valve XSV-3103	XSV-3103	ESD-2201			Field	Pot. Free	DI							
335	SOV-3103	Solenoid Valve for On - Off valve XSV-3103	XSV-3103	ESD-2201			Field	24 VDC	DO							
336	ZSO-3105	Open Limit switch for On - Off valve XSV-3105	XSV-3105	ESD-2201			Field	Pot. Free	DI							
337	ZSC-3105	Close Limit switch for On - Off valve XSV-3105	XSV-3105	ESD-2201			Field	Pot. Free	DI							
338	SOV-3105	Solenoid Valve for On - Off valve XSV-3105	XSV-3105	ESD-2201			Field	24 VDC	DO							
339	ZSO-3107	Open Limit switch for On - Off valve XSV-3107	XSV-3107	ESD-2201			Field	Pot. Free	DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
340	ZSC-3107	Close Limit switch for On - Off valve XSV-3107	XSV-3107	ESD-2201			Field	Pot. Free	DI							
341	SOV-3107	Solenoid Valve for On - Off valve XSV-3107	XSV-3107	ESD-2201			Field	24 VDC	DO							
342	ZSO-3104	Open Limit switch for On - Off valve XSV-3104	XSV-3104	ESD-2201			Field	Pot. Free	DI							
343	ZSC-3104	Close Limit switch for On - Off valve XSV-3104	XSV-3104	ESD-2201			Field	Pot. Free	DI							
344	SOV-3104	Solenoid Valve for On - Off valve XV-3104	XSV-3104	ESD-2201			Field	24 VDC	DO							
345	ZSO-3106	Open Limit switch for On - Off valve XSV-3106	XSV-3106	ESD-2201			Field	Pot. Free	DI							
346	ZSC-3106	Close Limit switch for On - Off valve XSV-3106	XSV-3106	ESD-2201			Field	Pot. Free	DI							
347	SOV-3106	Solenoid Valve for On - Off valve XSV-3106	XSV-3106	ESD-2201			Field	24 VDC	DO							
348	ZSO-3108	Open Limit switch for On - Off valve XSV-3108	XSV-3108	ESD-2201			Field	Pot. Free	DI							
349	ZSC-3108	Close Limit switch for On - Off valve XSV-3108	XSV-3108	ESD-2201			Field	Pot. Free	DI							
350	SOV-3108	Solenoid Valve for On - Off valve XSV-3108	XSV-3108	ESD-2201			Field	24 VDC	DO							
DRY CRUDE OIL DESPATCH SYSTEM / TCE.7547A-300-PI-8032																
351	ZSO-3213	Open Limit switch for On - Off valve XSV-3213	XSV-3213	ESD-2201, 3201			Field	Pot. Free	DI							
352	ZSC-3213	Close Limit switch for On - Off valve XSV-3213	XSV-3213	ESD-2201, 3201			Field	Pot. Free	DI							
353	SOV-3213	Solenoid Valve for On - Off valve XSV-3213	XSV-3213	ESD-2201, 3201			Field	24 VDC	DO							
354	ZSO-3214	Open Limit switch for On - Off valve XSV-3214	XSV-3214	ESD-2201, 3201			Field	Pot. Free	DI							
355	ZSC-3214	Close Limit switch for On - Off valve XSV-3214	XSV-3214	ESD-2201, 3201			Field	Pot. Free	DI							
356	SOV-3214	Solenoid Valve for On - Off valve XSV-3214	XSV-3214	ESD-2201, 3201			Field	24 VDC	DO							
357	ZSO-3215	Open Limit switch for On - Off valve XSV-3215	XSV-3215	ESD-2201, 3201			Field	Pot. Free	DI							
358	ZSC-3215	Close Limit switch for On - Off valve XSV-3215	XSV-3215	ESD-2201, 3201			Field	Pot. Free	DI							
359	SOV-3215	Solenoid Valve for On - Off valve XSV-3215	XSV-3215	ESD-2201, 3201			Field	24 VDC	DO							
360	ZSO-3216	Open Limit switch for On - Off valve XSV-3216	XSV-3216	ESD-2201, 3201			Field	Pot. Free	DI							
361	ZSC-3216	Close Limit switch for On - Off valve XSV-3216	XSV-3216	ESD-2201, 3201			Field	Pot. Free	DI							
362	SOV-3216	Solenoid Valve for On - Off valve XSV-3216	XSV-3216	ESD-2201, 3201			Field	24 VDC	DO							
363	ZSO-3217	Open Limit switch for On - Off valve XSV-3217	XSV-3217	ESD-2201, 3201			Field	Pot. Free	DI							
364	ZSC-3217	Close Limit switch for On - Off valve XSV-3217	XSV-3217	ESD-2201, 3201			Field	Pot. Free	DI							
365	SOV-3217	Solenoid Valve for On - Off valve XSV-3217	XSV-3217	ESD-2201, 3201			Field	24 VDC	DO							
366	ZSO-3218	Open Limit switch for On - Off valve XSV-3218	XSV-3218	ESD-2201, 3201			Field	Pot. Free	DI							
367	ZSC-3218	Close Limit switch for On - Off valve XSV-3218	XSV-3218	ESD-2201, 3201			Field	Pot. Free	DI							
368	SOV-3218	Solenoid Valve for On - Off valve XSV-3218	XSV-3218	ESD-2201, 3201			Field	24 VDC	DO							
369	ZSO-3219	Open Limit switch for On - Off valve XSV-3219	XSV-3219	ESD-2201, 3201			Field	Pot. Free	DI							
370	ZSC-3219	Close Limit switch for On - Off valve XSV-3219	XSV-3219	ESD-2201, 3201			Field	Pot. Free	DI							



SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
371	SOV-3219	Solenoid Valve for On - Off valve XSV-3219	XSV-3219	ESD-2201, 3201			Field	24 VDC	DO							
372	ZSO-3220	Open Limit switch for On - Off valve XSV-3220	XSV-3220	ESD-2201, 3201			Field	Pot. Free	DI							
373	ZSC-3220	Close Limit switch for On - Off valve XSV-3220	XSV-3220	ESD-2201, 3201			Field	Pot. Free	DI							
374	SOV-3220	Solenoid Valve for On - Off valve XSV-3220	XSV-3220	ESD-2201, 3201			Field	24 VDC	DO							
375	ZSO-3221	Open Limit switch for On - Off valve XSV-3221	XSV-3221	ESD-2201, 3201			Field	Pot. Free	DI							
376	ZSC-3221	Close Limit switch for On - Off valve XSV-3221	XSV-3221	ESD-2201, 3201			Field	Pot. Free	DI							
377	SOV-3221	Solenoid Valve for On - Off valve XSV-3221	XSV-3221	ESD-2201, 3201			Field	24 VDC	DO							
VENDOR PACKAGE																
378	STPB-001A	Stop Command For Bath Heater BH-001A	BH-001A				Field	24 VDC	DO							
379	STPB-001B	Stop Command For Bath Heater BH-001B	BH-001B				Field	24 VDC	DO							
380	STPB-002A	Stop Command For Bath Heater BH-002A	BH-002A				Field	24 VDC	DO							
381	STPB-002B	Stop Command For Bath Heater BH-002B	BH-002B				Field	24 VDC	DO							
382	STPB-002C	Stop Command For Bath Heater BH-002C	BH-002C				Field	24 VDC	DO							
383	STPB-002D	Stop Command For Bath Heater BH-002D	BH-002D				Field	24 VDC	DO							
384	STPE-001A	Stop Command For Electrostatic Emulsion Treater EET-001A	EET-001A				Field	24 VDC	DO							
385	STPE-001B	Stop Command For Eectrostatic Emulsion Treater EET-001B	EET-001B				Field	24 VDC	DO							
386	STPE-001C	Stop Command For Electrostatic Emulsion Treater EET-001C	EET-001C				Field	24 VDC	DO							
387	STPE-001D	Stop Command For Eectrostatic Emulsion Treater EET-001D	EET-001D				Field	24 VDC	DO							
388	STP-XXX	Stop Command For Boiler	XXXX				Field	24 VDC	DO							
										IO SUMMARY	ANALOG INPUT	ANALOG OUTPUT	DIGITAL INPUT	DIGITAL OUTPUT	FF	
										ESD	29	-	250	109	-	

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
STF INLET BATTERY LIMITS (CRUDE OIL AND NATURAL GAS) - TCE.7547A-300-PI-8020																
1	FDI -2003	Flame Detector in Wet crude oil & Condensate Oil	FD -2003	ESD-2003			Field	4-20mA & Pot. Free	AI & DI							
2	FDI -2004	Flame Detector in Natural Gas	FD -2004	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
3	GDI-2001	Gas Detector in Wet Crude Oil & Condensate Oil	GD-2001	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
4	GDI-2002	Gas Detector in Natural Gas	GD-2002	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
5	GDI-2003	Gas Detector in Knock Drum V-001	GD-2003	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
6	GDI-2004	Gas Detector in Wet Crude Oil & Condensate Oil	GD-2004	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
7	GDI-2005	Gas Detector in Wet Crude Oil	GD-2005	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
8	GDI-2006	Gas Detector in Wet Crude Oil	GD-2006	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
9	GDI-2007	Gas Detector in Wet Crude Oil & Condensate Oil	GD-2007	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
10	GDI-2008	Gas Detector in Wet Crude Oil	GD-2008	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
11	GDI-2009	Gas Detector in Wet Crude Oil	GD-2009	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
12	GDI-2010	Gas Detector in Natural Gas	GD-2010	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
13	GDI-2011	Gas Detector in Natural Gas	GD-2011	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
14	GDI-2012	Gas Detector in Natural Gas	GD-2012	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
15	GDI-2013	Gas Detector in Natural Gas	GD-2013	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
16	GDI-2014	Gas Detector in Natural Gas	GD-2014	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
17	GDI-2015	Gas Detector in Natural Gas	GD-2015	ESD-2001			Field	4-20mA & Pot. Free	AI & DI							
WET CRUDE OIL PREHEATING - TCE.7547A-300-PI-8021																
18	FDI - 2101	Flame Detector in Natural Gas to BMS	FD - 2101	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
19	GDI - 2101	Gas Detector in Bath Heaters BH-001 A/B	GD - 2101	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
20	GDI - 2102	Gas Detector in Bath Heaters BH-001 A/B	GD - 2102	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
21	GDI - 2103	Gas Detector in Bath Heaters BH-001 A/B	GD - 2103	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
22	GDI - 2104	Gas Detector in Bath Heaters BH-001 A/B	GD - 2104	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
CRUDE OIL STORAGE TANK (T-001) - TCE.7547A-300-PI-8022																
23	FDI-2201	Flame Detector in the Top of the Tank T-001	FD-2201	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
24	FDI-2202	Flame Detector in the Top of the Tank T-001	FD-2202	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
25	FDI-2203	Flame Detector in the Top of the Tank T-001	FD-2203	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							

## INPUT / OUTPUT LIST FOR FIRE AND GAS DETECTION SYSTEM

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
26	FDI-2204	Flame Detector in the Top of the Tank T-001	FD-2204	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
27	GDI-2201	Gas Detector in between the Tank & Dyke	GD-2201	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
28	GDI-2202	Gas Detector in the Tank T-001	GD-2202	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
29	GDI-2203	Gas Detector in the Tank T-001	GD-2203	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
30	GDI-2204	Gas Detector in the Tank T-001	GD-2204	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
31	GDI-2205	Gas Detector in the Tank T-001	GD-2205	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
32	GDI-2206	Gas Detector in the Tank T-001	GD-2206	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
33	GDI-2207	Gas Detector in the Tank T-001	GD-2207	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
<b>CRUDE OIL STORAGE TANK (T-002) - TCE.7547A-300-PI-8023</b>																
34	FDI-2301	Flame Detector in the Top of the Tank T-002	FD-2301	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
35	FDI-2302	Flame Detector in the Top of the Tank T-002	FD-2302	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
36	FDI-2303	Flame Detector in the Top of the Tank T-002	FD-2303	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
37	FDI-2304	Flame Detector in the Top of the Tank T-002	FD-2304	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
38	GDI-2302	Gas Detector in the Tank T-002	GD-2302	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
39	GDI-2303	Gas Detector in the Tank T-002	GD-2303	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
40	GDI-2304	Gas Detector in the Tank T-002	GD-2304	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
41	GDI-2305	Gas Detector in the Tank T-002	GD-2305	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
42	GDI-2306	Gas Detector in the Tank T-002	GD-2306	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
43	GDI-2307	Gas Detector in the Tank T-002	GD-2307	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
44	GDI-2301	Gas Detector in between the Tanks	GD-2301	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
<b>CRUDE OIL STORAGE TANK (T-003) - TCE.7547A-300-PI-8024</b>																
45	FDI-2401	Flame Detector in the Top of the Tank T-003	FD-2401	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
46	FDI-2402	Flame Detector in the Top of the Tank T-003	FD-2402	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
47	FDI-2403	Flame Detector in the Top of the Tank T-003	FD-2403	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
48	FDI-2404	Flame Detector in the Top of the Tank T-003	FD-2404	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
49	GFDI-2402	Gas Detector in the Tank T-003	GD-2402	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
50	GFDI-2403	Gas Detector in the Tank T-003	GD-2403	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
51	GFDI-2404	Gas Detector in the Tank T-003	GD-2404	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
52	GFDI-2405	Gas Detector in the Tank T-003	GD-2405	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
53	GFDI-2406	Gas Detector in the Tank T-003	GD-2406	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
54	GFDI-2407	Gas Detector in the Tank T-003	GD-2407	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
55	GFDI-2401	Gas Detector in between the Tanks	GD-2401	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
CRUDE OIL STORAGE TANK (T-004) - TCE.7547A-300-PI-8025																
56	FDI-2501	Flame Detector in the Top of the Tank T-004	FD-2501	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
57	FDI-2502	Flame Detector in the Top of the Tank T-004	FD-2502	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
58	FDI-2503	Flame Detector in the Top of the Tank T-004	FD-2503	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
59	FDI-2504	Flame Detector in the Top of the Tank T-004	FD-2504	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
60	GFDI-2502	Gas Detector in the Tank T-004	GD-2502	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
61	GFDI-2503	Gas Detector in the Tank T-004	GD-2503	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
62	GFDI-2504	Gas Detector in the Tank T-004	GD-2504	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
63	GFDI-2505	Gas Detector in the Tank T-004	GD-2505	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
64	GFDI-2506	Gas Detector in the Tank T-004	GD-2506	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
65	GFDI-2507	Gas Detector in the Tank T-004	GD-2507	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
66	GFDI-2501	Gas Detector in between the Tanks	GD-2501	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
CRUDE OIL STORAGE TANK (T-005) - TCE.7547A-300-PI-8026																
67	FDI-2601	Flame Detector in the Top of the Tank T-005	FD-2601	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
68	FDI-2602	Flame Detector in the Top of the Tank T-005	FD-2602	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
69	FDI-2603	Flame Detector in the Top of the Tank T-005	FD-2603	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
70	FDI-2604	Flame Detector in the Top of the Tank T-005	FD-2604	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
71	GDI-2602	Gas Detector in the Tank T-005	GD-2602	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
72	GDI-2603	Gas Detector in the Tank T-005	GD-2603	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
73	GDI-2604	Gas Detector in the Tank T-005	GD-2604	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
74	GDI-2605	Gas Detector in the Tank T-005	GD-2605	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
75	GDI-2606	Gas Detector in the Tank T-005	GD-2606	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
76	GDI-2607	Gas Detector in the Tank T-005	GD-2607	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
77	GDI-2601	Gas Detector in between the Tanks	GD-2601	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
CRUDE OIL STORAGE TANK (T-006) - TCE.7547A-300-PI-8027																
78	FDI-2701	Flame Detector in the Top of the Tank T-005	FD-2701	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
79	FDI-2702	Flame Detector in the Top of the Tank T-005	FD-2702	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
80	FDI-2703	Flame Detector in the Top of the Tank T-005	FD-2703	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
81	FDI-2704	Flame Detector in the Top of the Tank T-005	FD-2704	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
82	GDI-2702	Gas Detector in the Tank T-005	GD-2702	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
83	GDI-2703	Gas Detector in the Tank T-005	GD-2703	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
84	GDI-2704	Gas Detector in the Tank T-005	GD-2704	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
85	GDI-2705	Gas Detector in the Tank T-005	GD-2705	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
86	GDI-2706	Gas Detector in the Tank T-005	GD-2706	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
87	GDI-2707	Gas Detector in the Tank T-005	GD-2707	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
88	GDI-2701	Gas Detector in between the Tanks	GD-2701	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
CRUDE OIL CIRCULATION PUMPS AND ACCUMULATED WATER TRANSFER PUMPS - TCE.7547A-300-PI-8028																
89	FDI-2801	Flame Detector in Wet Crude Oil Circulation Pump - P-001 A/B/C/D	FD-2801	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
90	FDI-2802	Flame Detector in Accumulated Water Transfer Pump - P-002 A/B/C	FD-2802	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
91	GDI-2801	Gas Detector in Wet Crude Oil Circulation Pump - P-001 A/B/C/D	GD-2801	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
92	GDI-2802	Gas Detector in Wet Crude Oil Circulation Pump - P-001 A/B/C/D	GD-2802	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
93	GDI-2803	Gas Detector in Wet Crude Oil Circulation Pump - P-001 A/B/C/D	GD-2803	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
94	GDI-2804	Gas Detector in Wet Crude Oil Circulation Pump - P-001 A/B/C/D	GD-2804	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
95	GDI-2805	Gas Detector in Accumulated Water Transfer Pump - P-002 A/B/C	GD-2805	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
96	GDI-2806	Gas Detector in Accumulated Water Transfer Pump - P-002 A/B/C	GD-2806	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
97	GDI-2807	Gas Detector in Accumulated Water Transfer Pump - P-002 A/B/C	GD-2807	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
INDIRECT BATH HEATER (BH-002A/B/C/D) - TCE.7547A-300-PI-8029																
98	FDI-2901	Flame Detector in Bath Heaters BH-002A/B	FD-2901	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
99	FDI-2902	Flame Detector in Bath Heaters BH-002C/D	FD-2902	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
100	GDI-2901	Gas Detector in Bath Heaters BH-002A	GD-2901	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
101	GDI-2902	Gas Detector in Bath Heaters BH-002B	GD-2902	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
102	GDI-2903	Gas Detector in Bath Heaters BH-002C	GD-2903	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	SIGNAL TYPE	IO TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
103	GDI-2904	Gas Detector in Bath Heaters BH-002D	GD-2904	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
ELECTROSTATIC EMULSION TREATER (EET-001A/B) - TCE.7547A-300-PI-8030																
104	FDI-3001	Flame Detector in Electrostatic Emulsifier EET -001 A/B	FD-3001	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
105	GDI-3001	Gas Detector in Electrostatic Emulsifier EET -001 A/B	GD-3001	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
106	GDI-3002	Gas Detector in Electrostatic Emulsifier EET -001 A/B	GD-3002	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
107	GDI-3003	Gas Detector in Electrostatic Emulsifier EET -001 A/B	GD-3003	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
108	GDI-3004	Gas Detector in Electrostatic Emulsifier EET -001 A/B	GD-3004	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
ELECTROSTATIC EMULSION TREATER (EET-001C/D) - TCE.7547A-300-PI-8031																
109	FDI-3101	Flame Detector in Electrostatic Emulsifier EET -001 C/D	FD-3101	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
110	GDI-3101	Gas Detector in Electrostatic Emulsifier EET -001 C/D	GD-3101	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
111	GDI-3102	Gas Detector in Electrostatic Emulsifier EET -001 C/D	GD-3102	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
112	GDI-3103	Gas Detector in Electrostatic Emulsifier EET -001 C/D	GD-3103	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
113	GDI-3004	Gas Detector in Electrostatic Emulsifier EET -001 C/D	GD-3004	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
DRY CRUDE OIL DESPATCH SYSTEM / TCE.7547A-300-PI-8032																
114	FDI-3201	Flame Detector in Dry Crude Oil Dispatch Pump P-003A/B/C/D	FD-3201	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
115	GDI-3201	Gas Detector in Dry Crude Oil Dispatch Pump P-003A/B/C/D	GD-3201	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
116	GDI-3202	Gas Detector in Dry Crude Oil Dispatch Pump P-003A/B/C/D	GD-3202	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
117	GDI-3203	Gas Detector in Dry Crude Oil Dispatch Pump P-003A/B/C/D	GD-3203	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							
118	GDI-3204	Gas Detector in Dry Crude Oil Dispatch Pump P-003A/B/C/D	GD-3204	ESD-2201			Field	4-20mA & Pot. Free	AI & DI							

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
CRUDE OIL STORAGE TANK (T-001) - TCE.7547A-300-PI-8022																
1	XLRM-001A	Side entry Mixer - MX-001A Run Checkback	MX-001A	I-2203			MCC	DI	Pot.Free							
2	XLTM-001A	Side entry Mixer - MX-001A Trip Checkback	MX-001A	I-2203			MCC	DI	Pot.Free							
3	SSRM-001A	Side entry Mixer - MX-001A Local / Remote Selection	MX-001A	I-2203			MCC	DI	Pot.Free							
4	STRM-001A	Side entry Mixer - MX-001A Start Command	MX-001A	I-2203			MCC	DO	24VDC							
5	STPM-001A	Side entry Mixer - MX-001A Stop Command	MX-001A	I-2203			MCC	DO	24VDC							
6	XLRM-001B	Side entry Mixer - MX-001B Run Checkback	MX-001B	I-2203			MCC	DI	Pot.Free							
7	XLTM-001B	Side entry Mixer - MX-001B Trip Checkback	MX-001B	I-2203			MCC	DI	Pot.Free							
8	SSRM-001B	Side entry Mixer - MX-001B Local / Remote Selection	MX-001B	I-2203			MCC	DI	Pot.Free							
9	STRM-001B	Side entry Mixer - MX-001B Start Command	MX-001B	I-2203			MCC	DO	24VDC							
10	STPM-001B	Side entry Mixer - MX-001B Stop Command	MX-001B	I-2203			MCC	DO	24VDC							
CRUDE OIL STORAGE TANK (T-002) - TCE.7547A-300-PI-8023																
11	XLRM-002A	Side entry Mixer - MX-002A Run Checkback	MX-002A	I-2303			MCC	DI	Pot.Free							
12	XLTM-002A	Side entry Mixer - MX-002A Trip Checkback	MX-002A	I-2303			MCC	DI	Pot.Free							
13	SSRM-002A	Side entry Mixer - MX-002A Local / Remote Selection	MX-002A	I-2303			MCC	DI	Pot.Free							
14	STRM-002A	Side entry Mixer - MX-002A Start Command	MX-002A	I-2303			MCC	DO	24VDC							
15	STPM-002A	Side entry Mixer - MX-002A Stop Command	MX-002A	I-2303			MCC	DO	24VDC							
16	XLRM-002B	Side entry Mixer - MX-002B Run Checkback	MX-002B	I-2303			MCC	DI	Pot.Free							
17	XLTM-002B	Side entry Mixer - MX-002B Trip Checkback	MX-002B	I-2303			MCC	DI	Pot.Free							
18	SSRM-002B	Side entry Mixer - MX-002B Local / Remote Selection	MX-002B	I-2303			MCC	DI	Pot.Free							
19	STRM-002B	Side entry Mixer - MX-002B Start Command	MX-002B	I-2303			MCC	DO	24VDC							
20	STPM-002B	Side entry Mixer - MX-002B Stop Command	MX-002B	I-2303			MCC	DO	24VDC							
CRUDE OIL STORAGE TANK (T-003) - TCE.7547A-300-PI-8024																
21	XLRM-003A	Side entry Mixer - MX-003A Run Checkback	MX-003A	I-2403			MCC	DI	Pot.Free							
22	XLTM-003A	Side entry Mixer - MX-003A Trip Checkback	MX-003A	I-2403			MCC	DI	Pot.Free							
23	SSRM-003A	Side entry Mixer - MX-003A Local / Remote Selection	MX-003A	I-2403			MCC	DI	Pot.Free							
24	STRM-003A	Side entry Mixer - MX-003A Start Command	MX-003A	I-2403			MCC	DO	24VDC							
25	STPM-003A	Side entry Mixer - MX-003A Stop Command	MX-003A	I-2403			MCC	DO	24VDC							
26	XLRM-003B	Side entry Mixer - MX-003B Run Checkback	MX-003B	I-2403			MCC	DI	Pot.Free							
27	XLTM-003B	Side entry Mixer - MX-003B Trip Checkback	MX-003B	I-2403			MCC	DI	Pot.Free							

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
28	SSRM-003B	Side entry Mixer - MX-003B Local / Remote Selection	MX-003B	I-2403			MCC	DI	Pot.Free							
29	STRM-003B	Side entry Mixer - MX-003B Start Command	MX-003B	I-2403			MCC	DO	24VDC							
30	STPM-003B	Side entry Mixer - MX-003B Stop Command	MX-003B	I-2403			MCC	DO	24VDC							
CRUDE OIL STORAGE TANK (T-004) - TCE.7547A-300-PI-8025																
31	XLRM-004A	Side entry Mixer - MX-004A Run Checkback	MX-004A	I-2503			MCC	DI	Pot.Free							
32	XLTM-004A	Side entry Mixer - MX-004A Trip Checkback	MX-004A	I-2503			MCC	DI	Pot.Free							
33	SSRM-004A	Side entry Mixer - MX-004A Local / Remote Selection	MX-004A	I-2503			MCC	DI	Pot.Free							
34	STRM-004A	Side entry Mixer - MX-004A Start Command	MX-004A	I-2503			MCC	DO	24VDC							
35	STPM-004A	Side entry Mixer - MX-004A Stop Command	MX-004A	I-2503			MCC	DO	24VDC							
36	XLRM-004B	Side entry Mixer - MX-004B Run Checkback	MX-004B	I-2503			MCC	DI	Pot.Free							
37	XLTM-004B	Side entry Mixer - MX-004B Trip Checkback	MX-004B	I-2503			MCC	DI	Pot.Free							
38	SSRM-004B	Side entry Mixer - MX-004B Local / Remote Selection	MX-004B	I-2503			MCC	DI	Pot.Free							
39	STRM-004B	Side entry Mixer - MX-004B Start Command	MX-004B	I-2503			MCC	DO	24VDC							
40	STPM-004B	Side entry Mixer - MX-004B Stop Command	MX-004B	I-2503			MCC	DO	24VDC							
CRUDE OIL STORAGE TANK (T-005) - TCE.7547A-300-PI-8026																
41	XLRM-005A	Side entry Mixer - MX-005A Run Checkback	MX-005A	I-2603			MCC	DI	Pot.Free							
42	XLTM-005A	Side entry Mixer - MX-005A Trip Checkback	MX-005A	I-2603			MCC	DI	Pot.Free							
43	SSRM-005A	Side entry Mixer - MX-005A Local / Remote Selection	MX-005A	I-2603			MCC	DI	Pot.Free							
44	STRM-005A	Side entry Mixer - MX-005A Start Command	MX-005A	I-2603			MCC	DO	24VDC							
45	STPM-005A	Side entry Mixer - MX-005A Stop Command	MX-005A	I-2603			MCC	DO	24VDC							
46	XLRM-005B	Side entry Mixer - MX-005B Run Checkback	MX-005B	I-2603			MCC	DI	Pot.Free							
47	XLTM-005B	Side entry Mixer - MX-005B Trip Checkback	MX-005B	I-2603			MCC	DI	Pot.Free							
48	SSRM-005B	Side entry Mixer - MX-005B Local / Remote Selection	MX-005B	I-2603			MCC	DI	Pot.Free							
49	STRM-005B	Side entry Mixer - MX-005B Start Command	MX-005B	I-2603			MCC	DO	24VDC							
50	STPM-005B	Side entry Mixer - MX-005B Stop Command	MX-005B	I-2603			MCC	DO	24VDC							
CRUDE OIL STORAGE TANK (T-006) - TCE.7547A-300-PI-8027																
51	XLRM-006A	Side entry Mixer - MX-006A Run Checkback	MX-006A	I-2703			MCC	DI	Pot.Free							
52	XLTM-006A	Side entry Mixer - MX-006A Trip Checkback	MX-006A	I-2703			MCC	DI	Pot.Free							
53	SSRM-006A	Side entry Mixer - MX-006A Local / Remote Selection	MX-006A	I-2703			MCC	DI	Pot.Free							
54	STRM-006A	Side entry Mixer - MX-006A Start Command	MX-006A	I-2703			MCC	DO	24VDC							



SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
55	STPM-006A	Side entry Mixer - MX-006A Stop Command	MX-006A	I-2703			MCC	DO	24VDC							
56	XLRM-006B	Side entry Mixer - MX-006B Run Checkback	MX-006B	I-2703			MCC	DI	Pot.Free							
57	XLTM-006B	Side entry Mixer - MX-006B Trip Checkback	MX-006B	I-2703			MCC	DI	Pot.Free							
58	SSRM-006B	Side entry Mixer - MX-006B Local / Remote Selection	MX-006B	I-2703			MCC	DI	Pot.Free							
59	STRM-006B	Side entry Mixer - MX-006B Start Command	MX-006B	I-2703			MCC	DO	24VDC							
60	STPM-006B	Side entry Mixer - MX-006B Stop Command	MX-006B	I-2703			MCC	DO	24VDC							
EFFLUENT TREATMENT PLANT - TCE.7547A-300-PI-8040																
61	XLR-007A	Clarified Water Dispatch Pump P-007A Run Checkback	P-007A				MCC	DI	Pot.Free							
62	XLT-007A	Clarified Water Dispatch Pump P-007A Trip Checkback	P-007A				MCC	DI	Pot.Free							
63	SSR-007A	Clarified Water Dispatch Pump P-007A Local / Remote Selection	P-007A				MCC	DI	Pot.Free							
64	STR-007A	Clarified Water Dispatch Pump P-007A Start Command	P-007A				MCC	DO	24VDC							
65	STP-007A	Clarified Water Dispatch Pump P-007A Stop Command	P-007A				MCC	DO	24VDC							
66	XLR-007B	Clarified Water Dispatch Pump P-007B Run Checkback	P-007B				MCC	DI	Pot.Free							
67	XLT-007B	Clarified Water Dispatch Pump P-007B Trip Checkback	P-007B				MCC	DI	Pot.Free							
68	SSR-007B	Clarified Water Dispatch Pump P-007B Local / Remote Selection	P-007B				MCC	DI	Pot.Free							
69	STR-007B	Clarified Water Dispatch Pump P-007B Start Command	P-007B				MCC	DO	24VDC							
70	STP-007B	Clarified Water Dispatch Pump P-007B Stop Command	P-007B				MCC	DO	24VDC							
71	XLR-007C	Clarified Water Dispatch Pump P-007C Run Checkback	P-007C				MCC	DI	Pot.Free							
72	XLT-007C	Clarified Water Dispatch Pump P-007C Trip Checkback	P-007C				MCC	DI	Pot.Free							
73	SSR-007C	Clarified Water Dispatch Pump P-007C Local / Remote Selection	P-007C				MCC	DI	Pot.Free							
74	STR-007C	Clarified Water Dispatch Pump P-007C Start Command	P-007C				MCC	DO	24VDC							
75	STP-007C	Clarified Water Dispatch Pump P-007C Stop Command	P-007C				MCC	DO	24VDC							
76	XLR-007D	Clarified Water Dispatch Pump P-007D Run Checkback	P-007D				MCC	DI	Pot.Free							
77	XLT-007D	Clarified Water Dispatch Pump P-007D Trip Checkback	P-007D				MCC	DI	Pot.Free							
78	SSR-007D	Clarified Water Dispatch Pump P-007D Local / Remote Selection	P-007D				MCC	DI	Pot.Free							
79	STR-007D	Clarified Water Dispatch Pump P-007D Start Command	P-007D				MCC	DO	24VDC							
80	STP-007D	Clarified Water Dispatch Pump P-007D Stop Command	P-007D				MCC	DO	24VDC							
81	XLR-007E	Clarified Water Dispatch Pump P-007E Run Checkback	P-007E				MCC	DI	Pot.Free							
82	XLT-007E	Clarified Water Dispatch Pump P-007E Trip Checkback	P-007E				MCC	DI	Pot.Free							
83	SSR-007E	Clarified Water Dispatch Pump P-007E Local / Remote Selection	P-007E				MCC	DI	Pot.Free							

MCC INPUT / OUTPUT LIST FOR BPCS

SL.NO	INSTRU. TAG NO.	SERVICE	BPCS LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
84	STR-007E	Clarified Water Dispatch Pump P-007E Start Command	P-007E				MCC	DO	24VDC							
85	STP-007E	Clarified Water Dispatch Pump P-007E Stop Command	P-007E				MCC	DO	24VDC							
86	XLR-007F	Clarified Water Dispatch Pump P-007F Run Checkback	P-007F				MCC	DI	Pot.Free							
87	XLT-007F	Clarified Water Dispatch Pump P-007F Trip Checkback	P-007F				MCC	DI	Pot.Free							
88	SSR-007F	Clarified Water Dispatch Pump P-007F Local / Remote Selection	P-007F				MCC	DI	Pot.Free							
89	STR-007F	Clarified Water Dispatch Pump P-007F Start Command	P-007F				MCC	DO	24VDC							
90	STP-007F	Clarified Water Dispatch Pump P-007F Stop Command	P-007F				MCC	DO	24VDC							
91	XLR-007G	Clarified Water Dispatch Pump P-007G Run Checkback	P-007G				MCC	DI	Pot.Free							
92	XLT-007G	Clarified Water Dispatch Pump P-007G Trip Checkback	P-007G				MCC	DI	Pot.Free							
93	SSR-007G	Clarified Water Dispatch Pump P-007G Local / Remote Selection	P-007G				MCC	DI	Pot.Free							
94	STR-007G	Clarified Water Dispatch Pump P-007G Start Command	P-007G				MCC	DO	24VDC							
95	STP-007G	Clarified Water Dispatch Pump P-007G Stop Command	P-007G				MCC	DO	24VDC							
										IO SUMMA	ANALOG INPUT	ANALOG OUTPUT	DIGITAL INPUT	DIGITAL OUTPUT	FF	
										MCC - BPCS	-	-	57	38	-	

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
CRUDE OIL CIRCULATION PUMPS AND ACCUMULATED WATER TRANSFER PUMPS - TCE.7547A-300-PI-8028																
1	XLR-001A	Wet crude oil circulation pump P-001A Run Checkback	P-001A				Field	DI	Pot.Free							
2	XLT-001A	Wet crude oil circulation pump P-001A Trip Checkback	P-001A				Field	DI	Pot.Free							
3	SSR-001A	Wet crude oil circulation pump P-001A Local / Remote Selection	P-001A				Field	DI	Pot.Free							
4	STR-001A	Wet crude oil circulation pump P-001A Start Command	P-001A				Field	DO	24VDC							
5	STP-001A	Wet crude oil circulation pump P-001A Stop Command	P-001A				Field	DO	24VDC							
6	XLR-001B	Wet crude oil circulation pump P-001B Run Checkback	P-001B				Field	DI	Pot.Free							
7	XLR-001B	Wet crude oil circulation pump P-001B Trip Checkback	P-001B				Field	DI	Pot.Free							
8	SSR-001B	Wet crude oil circulation pump P-001B Local / Remote Selection	P-001B				Field	DI	Pot.Free							
9	STR-001B	Wet crude oil circulation pump P-001B Start Command	P-001B				Field	DO	24VDC							
10	STP-001B	Wet crude oil circulation pump P-001B Stop Command	P-001B				Field	DO	24VDC							
11	XLR-001C	Wet crude oil circulation pump P-001C Run Checkback	P-001C				Field	DI	Pot.Free							
12	XLR-001C	Wet crude oil circulation pump P-001C Trip Checkback					Field	DI	Pot.Free							
13	SSR-001C	Wet crude oil circulation pump P-001C Local / Remote Selection	P-001C				Field	DI	Pot.Free							
14	STR-001C	Wet crude oil circulation pump P-001C Start Command	P-001C				Field	DO	24VDC							
15	STP-001C	Wet crude oil circulation pump P-001C Stop Command	P-001C				Field	DO	24VDC							
16	XLR-001D	Wet crude oil circulation pump P-001D Run Checkback	P-001D				Field	DI	Pot.Free							
17	XLR-001D	Wet crude oil circulation pump P-001D Trip Checkback	P-001D				Field	DI	Pot.Free							
18	SSR-001D	Wet crude oil circulation pump P-001D Local / Remote Selection	P-001D				Field	DI	Pot.Free							
19	STR-001D	Wet crude oil circulation pump P-001D Start Command	P-001D				Field	DO	24VDC							
20	STP-001D	Wet crude oil circulation pump P-001D Stop Command	P-001D				Field	DO	24VDC							
21	XLR-004A	Accumulated water Transfer pump P-004A Run Checkback	P-004A				Field	DI	Pot.Free							
22	XLR-004A	Accumulated water Transfer pump P-004A Trip Checkback					Field	DI	Pot.Free							
23	SSR-004A	Accumulated water Transfer pump P-004A Local / Remote Selection	P-004A				Field	DI	Pot.Free							
24	STR-004A	Accumulated water Transfer pump P-004A Start Command	P-004A				Field	DO	24VDC							
25	STP-004A	Accumulated water Transfer pump P-004A Stop Command	P-004A				Field	DO	24VDC							
26	XLR-004B	Accumulated water Transfer pump P-004B Run Checkback	P-004B				Field	DI	Pot.Free							
27	XLR-004B	Accumulated water Transfer pump P-004B Trip Checkback	P-004B				Field	DI	Pot.Free							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
28	SSR-004B	Accumulated water Transfer pump P-004B Local / Remote Selection	P-004B				Field	DI	Pot.Free							
29	STR-004B	Accumulated water Transfer pump P-004B Start Command	P-004B				Field	DO	24VDC							
30	STP-004B	Accumulated water Transfer pump P-004B Stop Command	P-004B				Field	DO	24VDC							
31	XLR-004C	Accumulated water Transfer pump P-004C Run Checkback	P-004C				Field	DI	Pot.Free							
32	XLR-004C	Accumulated water Transfer pump P-004C Trip Checkback					Field	DI	Pot.Free							
33	SSR-004C	Accumulated water Transfer pump P-004C Local / Remote Selection	P-004C				Field	DI	Pot.Free							
34	STR-004C	Accumulated water Transfer pump P-004C Start Command	P-004C				Field	DO	24VDC							
35	STP-004C	Accumulated water Transfer pump P-004C Stop Command	P-004C				Field	DO	24VDC							
DRY CRUDE OIL DESPATCH SYSTEM / TCE.7547A-300-PI-8032																
36	XLR-003A	Dry crude oil dispatch pump P-003A Run Checkback	P-003A				Field	DI	Pot.Free							
37	XLR-003A	Dry crude oil dispatch pump P-003A Trip Checkback	P-003A				Field	DI	Pot.Free							
38	SSR-003A	Dry crude oil dispatch pump P-003A Local / Remote Selection	P-003A				Field	DI	Pot.Free							
39	STR-003A	Dry crude oil dispatch pump P-003A Start Command	P-003A				Field	DO	24VDC							
40	STP-003A	Dry crude oil dispatch pump P-003A Stop Command	P-003B				Field	DO	24VDC							
41	XLR-003B	Dry crude oil dispatch pump P-003B Run Checkback					Field	DI	Pot.Free							
42	XLR-003B	Dry crude oil dispatch pump P-003B Trip Checkback	P-003B				Field	DI	Pot.Free							
43	SSR-003B	Dry crude oil dispatch pump P-003B Local / Remote Selection	P-003B				Field	DI	Pot.Free							
44	STR-003B	Dry crude oil dispatch pump P-003B Start Command	P-003B				Field	DO	24VDC							
45	STP-003B	Dry crude oil dispatch pump P-003B Stop Command	P-003B				Field	DO	24VDC							
46	XLR-003C	Dry crude oil dispatch pump P-003C Run Checkback	P-003C				Field	DI	Pot.Free							
47	XLR-003C	Dry crude oil dispatch pump P-003C Trip Checkback	P-003C				Field	DI	Pot.Free							
48	SSR-003C	Dry crude oil dispatch pump P-003C Local / Remote Selection	P-003C				Field	DI	Pot.Free							
49	STR-003C	Dry crude oil dispatch pump P-003C Start Command	P-003C				Field	DO	24VDC							
50	STP-003C	Dry crude oil dispatch pump P-003C Stop Command	P-003C				Field	DO	24VDC							
51	XLR-003D	Dry crude oil dispatch pump P-003D Run Checkback	P-003D				Field	DI	Pot.Free							
52	XLR-003D	Dry crude oil dispatch pump P-003D Trip Checkback	P-003D				Field	DI	Pot.Free							
53	SSR-003D	Dry crude oil dispatch pump P-003D Local / Remote Selection	P-003D				Field	DI	Pot.Free							
54	STR-003D	Dry crude oil dispatch pump P-003D Start Command	P-003D				Field	DO	24VDC							

SL.NO	INSTRU. TAG NO.	SERVICE	ESD LOOP NO.	INTERLOCK SEQ.NO.	FUNCTION		LOCATION	I/O TYPE	SIGNAL TYPE	INSTRUMENT RANGE			ALARM TYPE	TRIP POINT	ALARM PRIORITY	REMARKS
					CONTROL ACTION	FAIL SAFE POSITION				LOW LIMIT	HIGH LIMIT	ENGG. UNIT				
55	STP-003D	Dry crude oil dispatch pump P-003D Stop Command	P-003D				Field	DO	24VDC							
										IO SUMMA	ANALOG INPUT	ANALOG OUTPUT	DIGITAL INPUT	DIGITAL OUTPUT	FF	
										MCC - ESD	-	-	33	22	-	