

**LEGEND:**

- (P) PULSE SIGNAL
- (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
- (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
- (MT) MANUAL ACTIVATION OF IS-UNIT
- (R) MANUAL RESET OF IS-UNIT
- (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
- (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
- AND AND GATE

**NOTES:**

- 1) CONTROLLER TO MANUAL WITH 0% OUTPUT.
- 2) SWITCH FIC-2072/5407 TO AUTO WITH A PRESET SETPOINT AND RAMPING THIS SETPOINT DOWN TO ZERO IN 10 MINUTES, HEREAFTER FIC-2072/5407 IS SET IN MANUAL WITH ZERO HEREAFTER FIC-2072/5407 IS SET IN MANUAL WITH ZERO OUTPUT. CLOSE HV-2098 AFTER 10 MINUTES.
- 3) CONTROLLER TO AUTO WHEN SIGNAL FROM IS-1. SET POINT EQUAL TO PROCESS VALUE BEFORE TRIP. SET POINT MUST BE RAMPED DOWN TO 3 bar-a OVER 10 MINUTES.

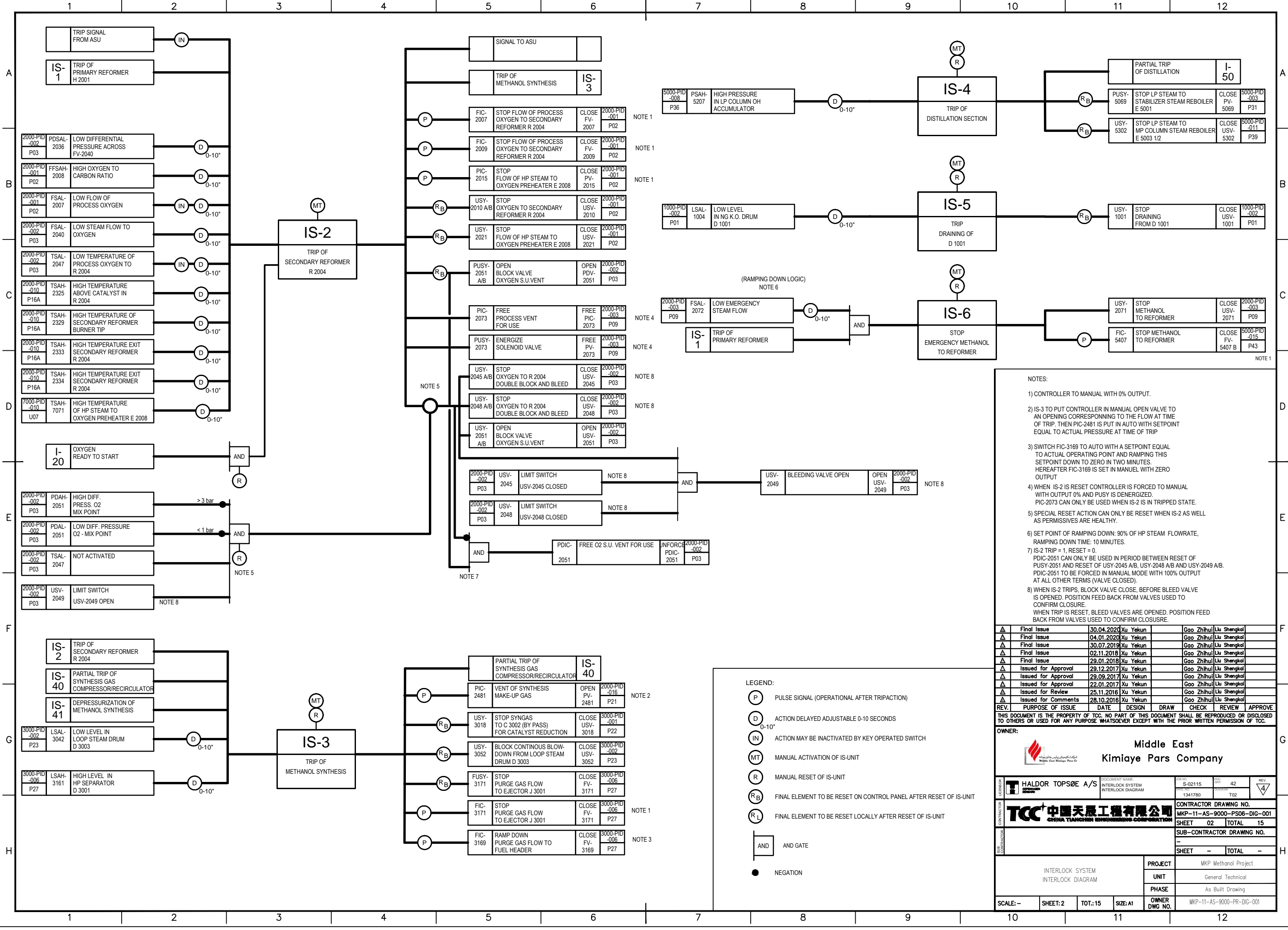
REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Final Issue	04.01.2020	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Final Issue	30.07.2019	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Final Issue	02.11.2018	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Final Issue	29.01.2018	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Issued for Approval	29.12.2017	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Issued for Approval	10.04.2017	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Issued for Approval	22.01.2017	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Issued for Review	25.11.2016	Xu Yekun	Gao Zhihui	Liu Shengkol		
Δ	Issued for Comments	28.10.2016	Xu Yekun	Gao Zhihui	Liu Shengkol		

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**OWNER:**

**Middle East  
Kimiaye Pars Company**

	DOCUMENT NAME INTERLOCK SYSTEM INTERLOCK DIAGRAM	FOR NO. S-02115	SHEET NO. 42	REV. 4
	LEASOR TCC	CONTRACTOR 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION	PROJECT NO. MKP-11-AS-9000-PS06-DIG-001	SHEET NO. 01
SUB-CONTRACTOR		CONTRACTOR DRAWING NO.		TOTAL SHEETS 15
PROJECT MKP Methanol Project		UNIT General Technical		PHASE As Built Drawing
SCALE: -	SHEET: 1	TOT.: 15	SIZE: A1	OWNER DWG NO. MKP-11-AS-9000-PR-DIG-001



- NOTES:
- 1) CONTROLLER TO MANUAL WITH 0% OUTPUT.
  - 2) IS-3 TO PUT CONTROLLER IN MANUAL OPEN VALVE TO AN OPENING CORRESPONDING TO THE FLOW AT TIME OF TRIP. THEN PIC-2481 IS PUT IN AUTO WITH SETPOINT EQUAL TO ACTUAL PRESSURE AT TIME OF TRIP.
  - 3) SWITCH FIC-3169 TO AUTO WITH A SETPOINT EQUAL TO ACTUAL OPERATING POINT AND RAMPING THIS SETPOINT DOWN TO ZERO IN TWO MINUTES. HEREAFTER FIC-3169 IS SET IN MANUAL WITH ZERO OUTPUT.
  - 4) WHEN IS-2 IS RESET CONTROLLER IS FORCED TO MANUAL WITH OUTPUT 0% AND PUSY IS DENERGIZED. PIC-2073 CAN ONLY BE USED WHEN IS-2 IS IN TRIPPED STATE.
  - 5) SPECIAL RESET ACTION CAN ONLY BE RESET WHEN IS-2 AS WELL AS PERMISSIVES ARE HEALTHY.
  - 6) SET POINT OF RAMPING DOWN: 90% OF HP STEAM FLOWRATE, RAMPING DOWN TIME: 10 MINUTES.
  - 7) IS-2 TRIP = 1, RESET = 0. PDIC-2051 CAN ONLY BE USED IN PERIOD BETWEEN RESET OF PUSY-2051 AND RESET OF USY-2045 A/B, USY-2048 A/B AND USY-2049 A/B. PDIC-2051 TO BE FORCED IN MANUAL MODE WITH 100% OUTPUT AT ALL OTHER TERMS (VALVE CLOSED).
  - 8) WHEN IS-2 TRIPS, BLOCK VALVE CLOSE, BEFORE BLEED VALVE IS OPENED. POSITION FEED BACK FROM VALVES USED TO CONFIRM CLOSURE. WHEN TRIP IS RESET, BLEED VALVES ARE OPENED. POSITION FEED BACK FROM VALVES USED TO CONFIRM CLOSURE.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Xu Yekun	Gao Zhihui	Liu Shengkai		
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Δ	Issued for Comments	28.10.2016	Xu Yekun	Gao Zhihui	Liu Shengkai		

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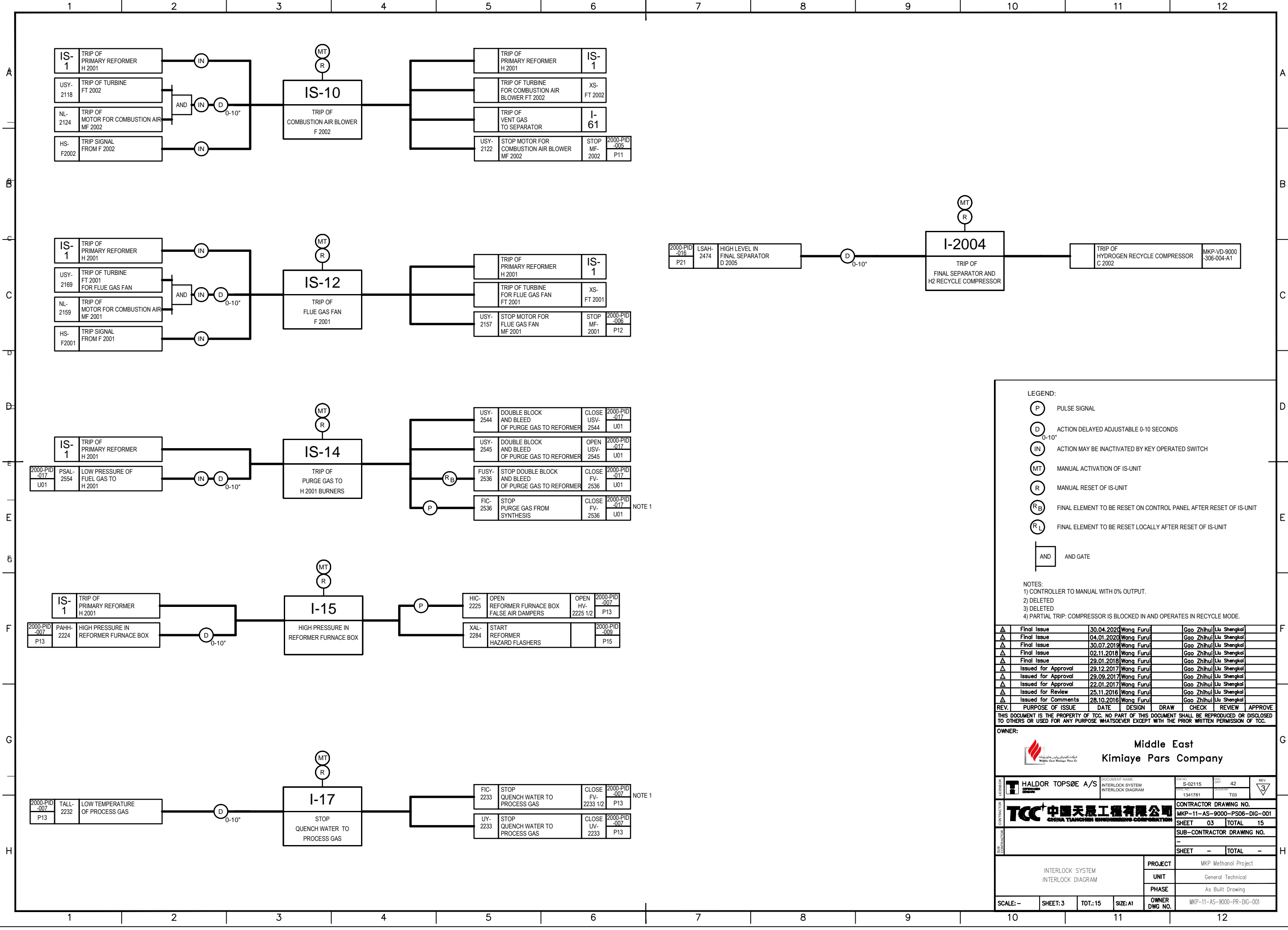
LENSOR: **HALDOR TOPSØE A/S** DOCUMENT NAME: INTERLOCK SYSTEM INTERLOCK DIAGRAM FOR NO: S-02115 DDC: 42 REV: 4

CONTRACTOR: **TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION** CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS06-DIG-001 SHEET 02 TOTAL 15

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. SHEET - TOTAL -

PROJECT: MKP Methanol Project  
UNIT: General Technical  
PHASE: As Built Drawing  
SCALE: - SHEET: 2 TOT.: 15 SIZE: A1 OWNER DWG NO. MKP-11-AS-9000-PR-DIG-001

- LEGEND:
- (P) PULSE SIGNAL (OPERATIONAL AFTER TRIPACTION)
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (RB) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (RL) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
  - AND AND GATE
  - NEGATION



**LEGEND:**

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- (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
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**NOTES:**

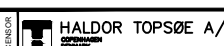

- 1) CONTROLLER TO MANUAL WITH 0% OUTPUT.
- 2) DELETED
- 3) DELETED
- 4) PARTIAL TRIP: COMPRESSOR IS BLOCKED IN AND OPERATES IN RECYCLE MODE.

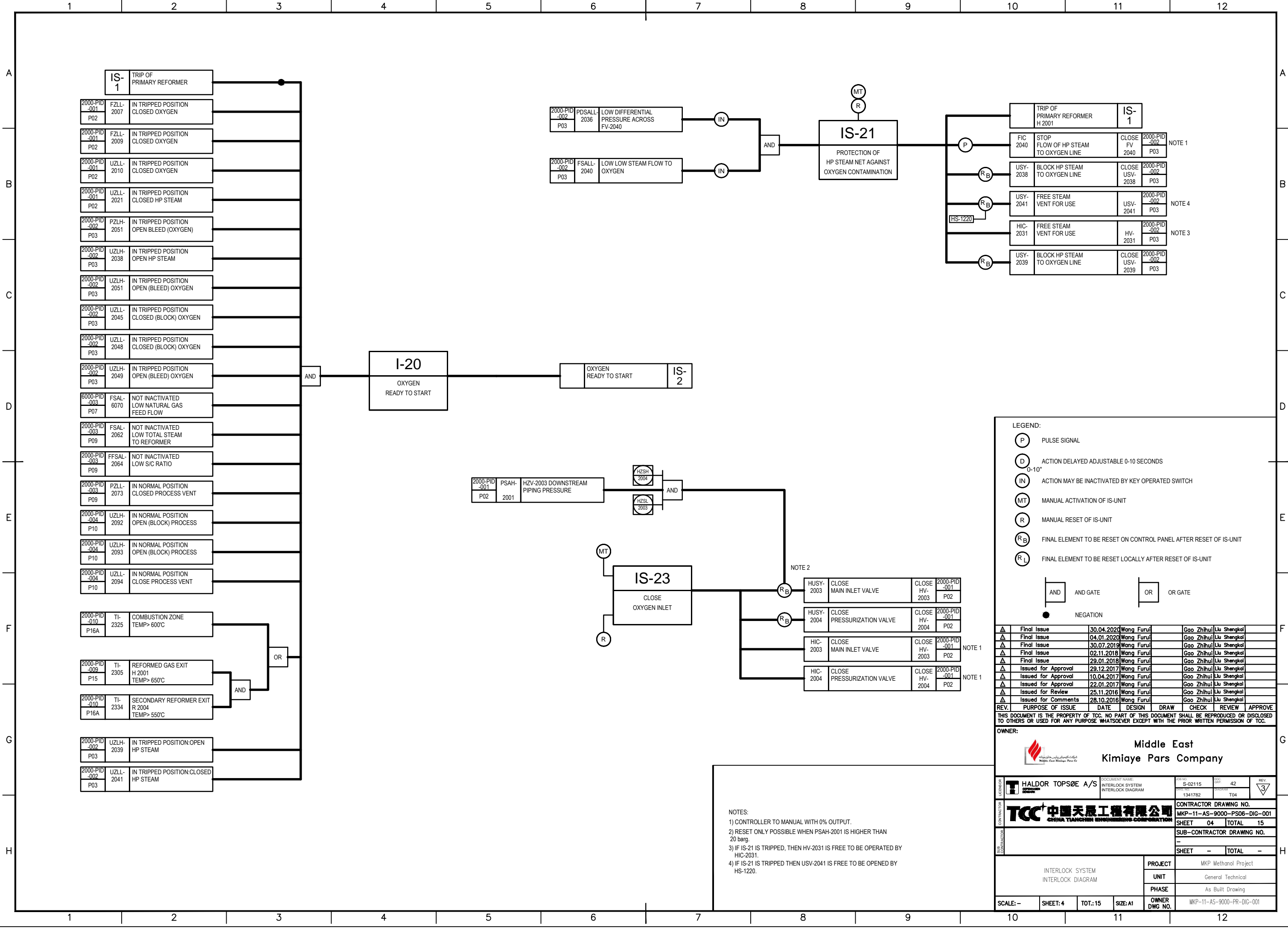
REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Wang Furui	Gao Zhihui	Liu Shengkal		
Δ	Final Issue	04.01.2020	Wang Furui	Gao Zhihui	Liu Shengkal		
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 <b>HALDOR TOPSØE A/S</b>	DOCUMENT NAME	FOR NO.	ISSUE NO.	REV.
	INTERLOCK SYSTEM INTERLOCK DIAGRAM	S-02115	42	3
 <b>TCC 中国天辰工程有限公司</b> CHINA TIANCHEN ENGINEERING CORPORATION	CONTRACTOR DRAWING NO.			
	MKP-11-AS-9000-PS06-DIG-001		SHEET	TOTAL
SUB-CONTRACTOR DRAWING NO.				
SHEET		TOTAL		
PROJECT		MKP Methanol Project		
UNIT		General Technical		
PHASE		As Built Drawing		
SCALE: -	SHEET: 3	TOT.: 15	SIZE: A1	OWNER DWG NO. MKP-11-AS-9000-PR-DIG-001



IS-1	TRIP OF PRIMARY REFORMER
2000-PID-001 P02	FZLL-2007 IN TRIPPED POSITION CLOSED OXYGEN
2000-PID-001 P02	FZLL-2009 IN TRIPPED POSITION CLOSED OXYGEN
2000-PID-001 P02	UZLL-2010 IN TRIPPED POSITION CLOSED OXYGEN
2000-PID-001 P02	UZLL-2021 IN TRIPPED POSITION CLOSED HP STEAM
2000-PID-002 P03	PZLH-2051 IN TRIPPED POSITION OPEN BLEED (OXYGEN)
2000-PID-002 P03	UZLH-2038 IN TRIPPED POSITION OPEN HP STEAM
2000-PID-002 P03	UZLH-2051 IN TRIPPED POSITION OPEN (BLEED) OXYGEN
2000-PID-002 P03	UZLL-2045 IN TRIPPED POSITION CLOSED (BLOCK) OXYGEN
2000-PID-002 P03	UZLL-2048 IN TRIPPED POSITION CLOSED (BLOCK) OXYGEN
2000-PID-002 P03	UZLH-2049 IN TRIPPED POSITION OPEN (BLEED) OXYGEN
6000-PID-003 P07	FSAL-6070 NOT INACTIVATED LOW NATURAL GAS FEED FLOW
2000-PID-003 P09	FSAL-2062 NOT INACTIVATED LOW TOTAL STEAM TO REFORMER
2000-PID-003 P09	FFSAL-2064 NOT INACTIVATED LOW S/C RATIO
2000-PID-003 P09	PZLL-2073 IN NORMAL POSITION CLOSED PROCESS VENT
2000-PID-004 P10	UZLH-2092 IN NORMAL POSITION OPEN (BLOCK) PROCESS
2000-PID-004 P10	UZLH-2093 IN NORMAL POSITION OPEN (BLOCK) PROCESS
2000-PID-004 P10	UZLL-2094 IN NORMAL POSITION CLOSE PROCESS VENT
2000-PID-010 P16A	TI-2325 COMBUSTION ZONE TEMP> 600°C
2000-PID-009 P15	TI-2305 REFORMED GAS EXIT H 2001 TEMP> 650°C
2000-PID-010 P16A	TI-2334 SECONDARY REFORMER EXIT R 2004 TEMP> 550°C
2000-PID-002 P03	UZLH-2039 IN TRIPPED POSITION:OPEN HP STEAM
2000-PID-002 P03	UZLL-2041 IN TRIPPED POSITION:CLOSED HP STEAM

2000-PID-002 P03	PDSALL-2036	LOW DIFFERENTIAL PRESSURE ACROSS FV-2040
2000-PID-002 P03	FSALL-2040	LOW LOW STEAM FLOW TO OXYGEN

TRIP OF PRIMARY REFORMER H 2001	IS-1			
FIC-2040	STOP FLOW OF HP STEAM TO OXYGEN LINE	CLOSE FV-2040	2000-PID-002 P03	NOTE 1
USV-2038	BLOCK HP STEAM TO OXYGEN LINE	CLOSE USV-2038	2000-PID-002 P03	
USV-2041	FREE STEAM VENT FOR USE	USV-2041	2000-PID-002 P03	NOTE 4
HIC-2031	FREE STEAM VENT FOR USE	HV-2031	2000-PID-002 P03	NOTE 3
USV-2039	BLOCK HP STEAM TO OXYGEN LINE	CLOSE USV-2039	2000-PID-002 P03	

2000-PID-001 P02	PSAH-2001	HZV-2003 DOWNSTREAM PIPING PRESSURE
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HUSY-2003	CLOSE MAIN INLET VALVE	CLOSE HV-2003	2000-PID-001 P02	NOTE 2
HUSY-2004	CLOSE PRESSURIZATION VALVE	CLOSE HV-2004	2000-PID-001 P02	
HIC-2003	CLOSE MAIN INLET VALVE	CLOSE HV-2003	2000-PID-001 P02	NOTE 1
HIC-2004	CLOSE PRESSURIZATION VALVE	CLOSE HV-2004	2000-PID-001 P02	NOTE 1

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AND GATE    OR GATE

● NEGATION

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkal	
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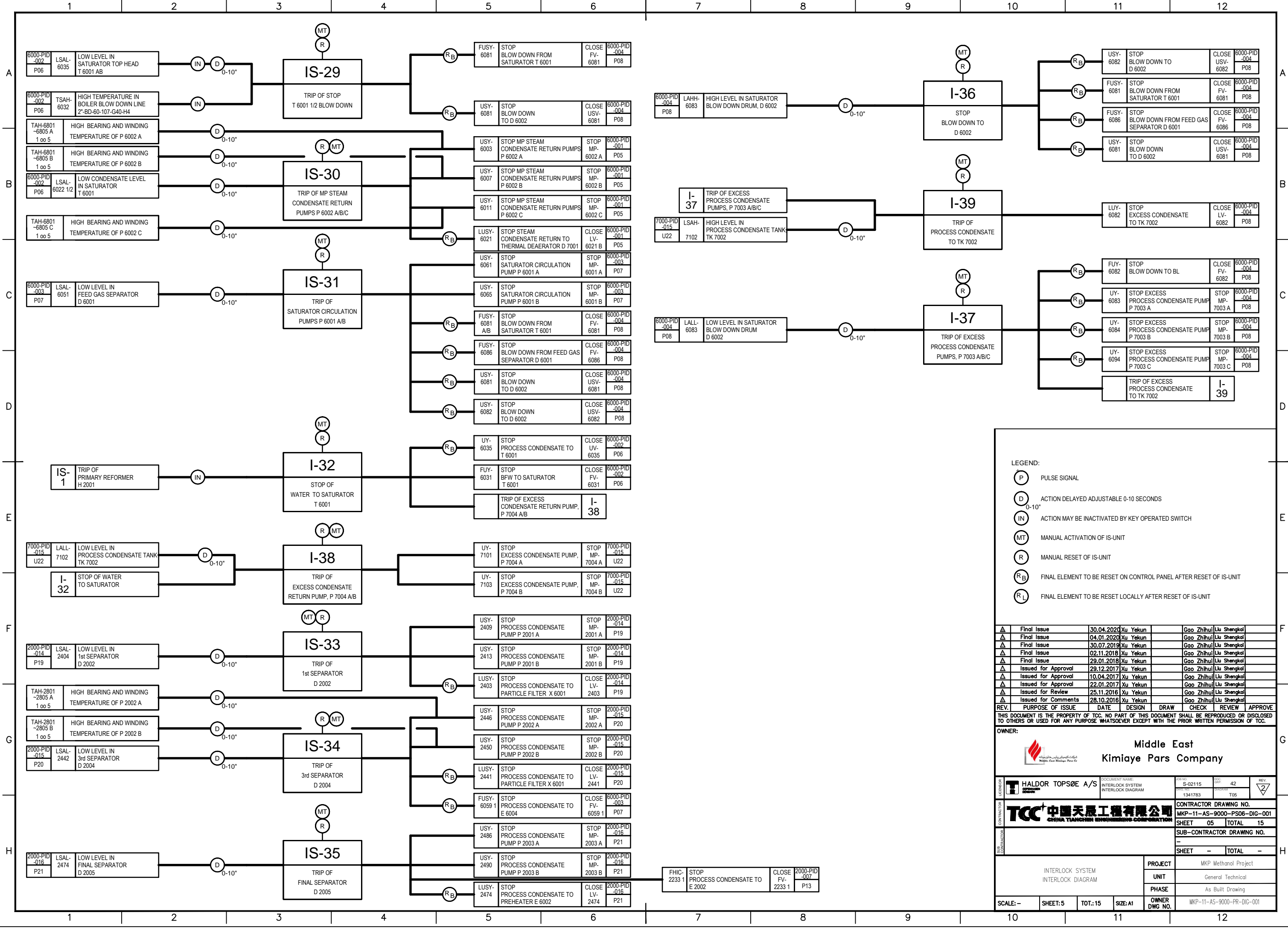
**Middle East  
Kimiaye Pars Company**

	DOCUMENT NAME INTERLOCK SYSTEM INTERLOCK DIAGRAM	FOR NO. S-02115	SHEET NO. 42	REV. 3
		CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS06-DIG-001	SHEET 04	TOTAL 15
SUB-CONTRACTOR DRAWING NO. -		SHEET -		TOTAL -
INTERLOCK SYSTEM INTERLOCK DIAGRAM		PROJECT MKP Methanol Project	UNIT General Technical	
SCALE: -		SHEET: 4	TOT.: 15	SIZE: A1
OWNER DWG NO.		MKP-11-AS-9000-PR-DIG-001		

**NOTES:**

- 1) CONTROLLER TO MANUAL WITH 0% OUTPUT.
- 2) RESET ONLY POSSIBLE WHEN PSAH-2001 IS HIGHER THAN 20 barg.
- 3) IF IS-21 IS TRIPPED, THEN HV-2031 IS FREE TO BE OPERATED BY HIC-2031.
- 4) IF IS-21 IS TRIPPED THEN USV-2041 IS FREE TO BE OPENED BY HS-1220.





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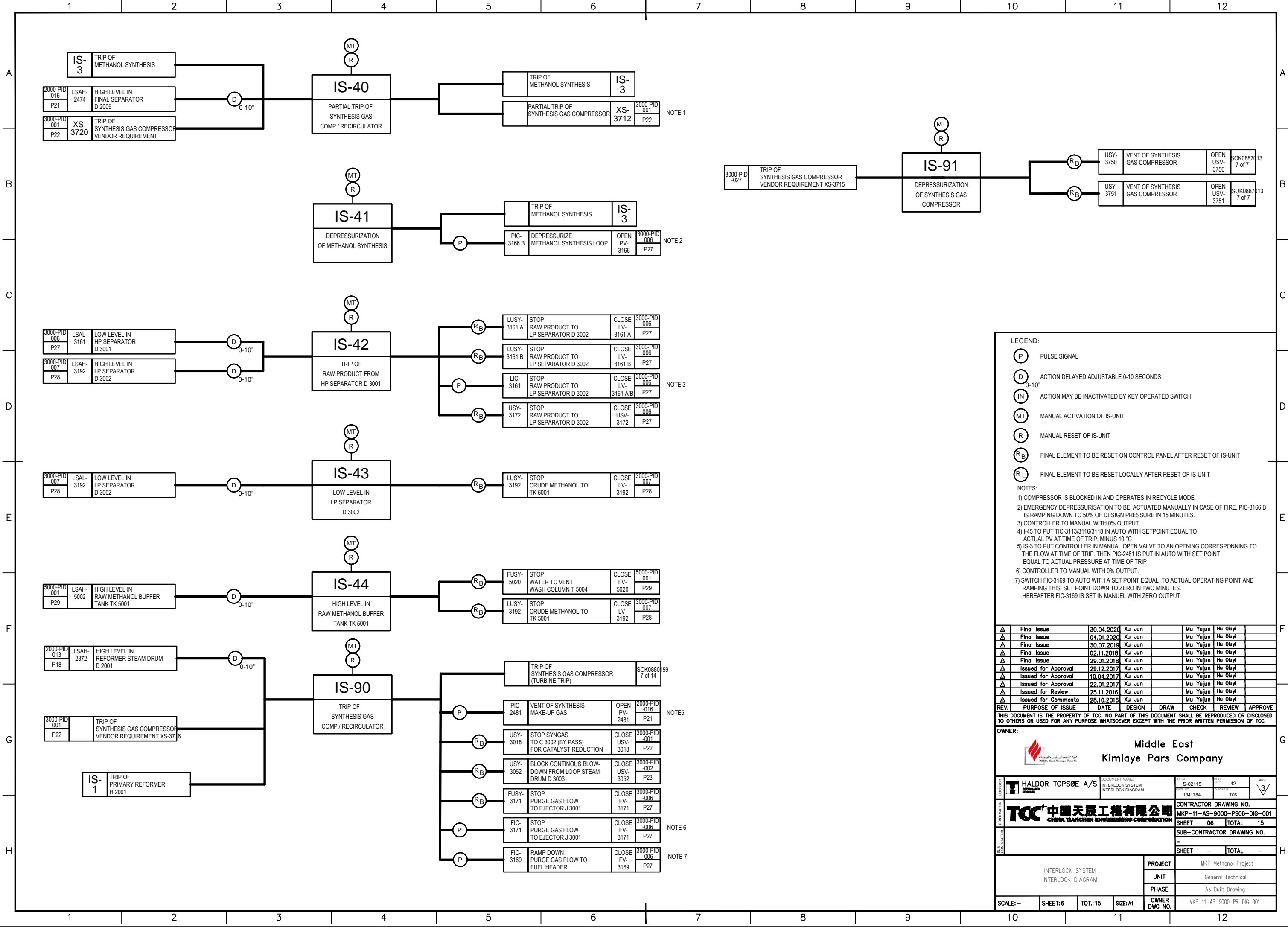
**OWNER:**

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Kimiaye Pars Company**

**CONTRACTOR:** TCC 中国天辰工程有限公司  
CHINA TIANCHEN ENGINEERING CORPORATION

**PROJECT:** MKP Methanol Project  
**UNIT:** General Technical  
**PHASE:** As Built Drawing

**SCALE:** - **SHEET:** 5 **TOT.:** 15 **SIZE:** A1 **OWNER DWG NO.:** MKP-11-AS-9000-PR-DIG-001



**LEGEND:**

- (P) PULSE SIGNAL
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**NOTES:**

- COMPRESSOR IS BLOCKED IN AND OPERATES IN RECYCLE MODE.
- EMERGENCY DEPRESSURISATION TO BE ACTUATED MANUALLY IN CASE OF FIRE. PIC-3166 B IS RAMPING DOWN TO 50% OF DESIGN PRESSURE IN 15 MINUTES.
- CONTROLLER TO MANUAL WITH 0% OUTPUT.
- I-45 TO PUT TIC-3113/3116/3118 IN AUTO WITH SETPOINT EQUAL TO ACTUAL PV AT TIME OF TRIP, MINUS 10 °C
- IS-3 TO PUT CONTROLLER IN MANUAL OPEN VALVE TO AN OPENING CORRESPONDING TO THE FLOW AT TIME OF TRIP. THEN PIC-2481 IS PUT IN AUTO WITH SET POINT EQUAL TO ACTUAL PRESSURE AT TIME OF TRIP
- CONTROLLER TO MANUAL WITH 0% OUTPUT.
- SWITCH FIC-3169 TO AUTO WITH A SET POINT EQUAL TO ACTUAL OPERATING POINT AND RAMPING THIS SET POINT DOWN TO ZERO IN TWO MINUTES. HEREAFTER FIC-3169 IS SET IN MANUAL WITH ZERO OUTPUT

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Xu Jun		Mu Yu jun	Hu Qiyi	
Δ	Final Issue	04.01.2020	Xu Jun		Mu Yu jun	Hu Qiyi	
Δ	Final Issue	30.07.2019	Xu Jun		Mu Yu jun	Hu Qiyi	
Δ	Final Issue	02.11.2018	Xu Jun		Mu Yu jun	Hu Qiyi	
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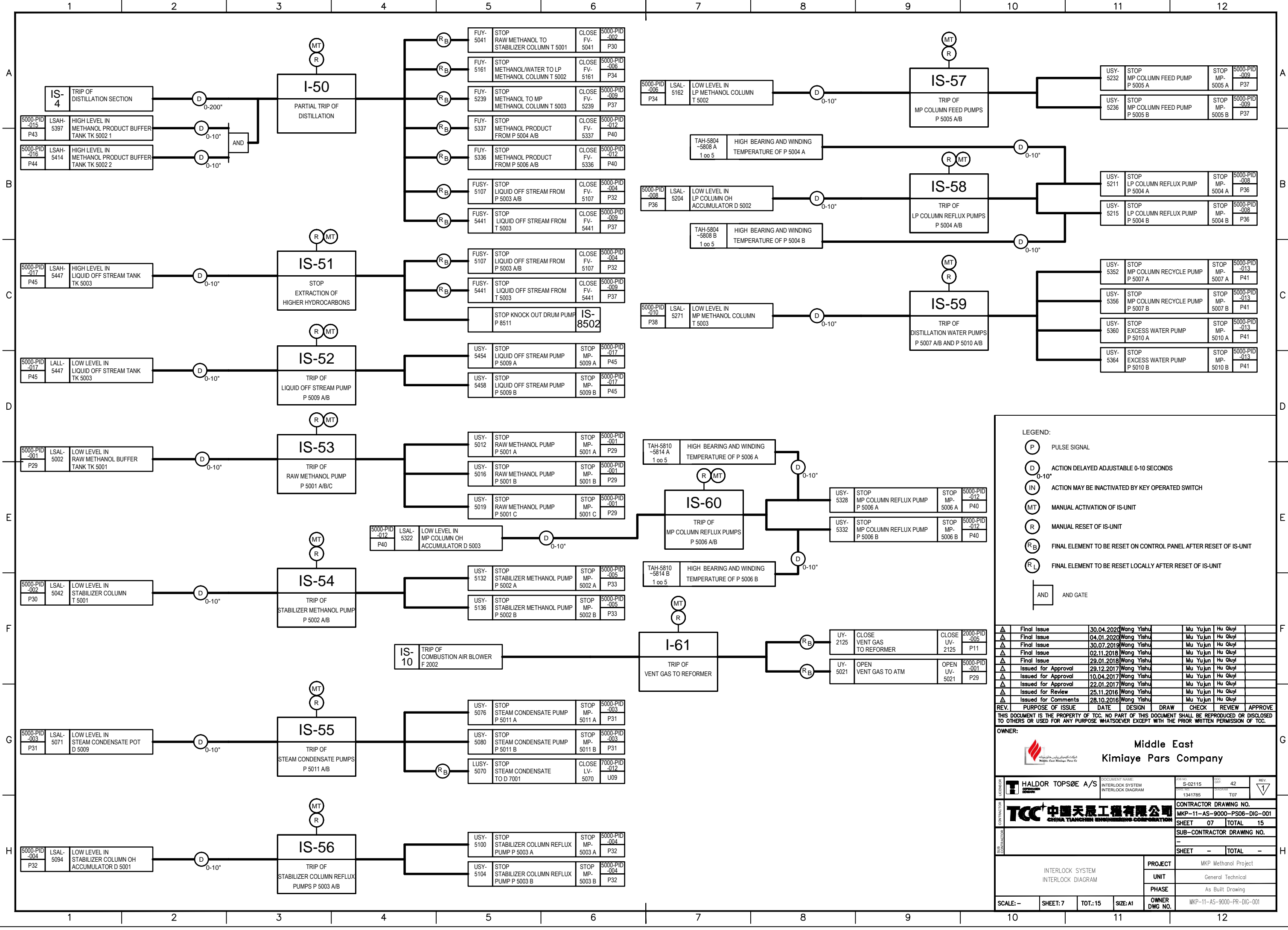
**CONTRACTOR:** TCC 中国天辰工程有限公司  
CHINA TIANCHEN ENGINEERING CORPORATION

**PROJECT:** MKP Methanol Project

**UNIT:** General Technical

**PHASE:** As Built Drawing

**SCALE:** - **SHEET:** 6 **TOT.:** 15 **SIZE:** A1 **OWNER DWG NO.:** MKP-11-AS-9000-PR-DIG-001



- LEGEND:
- (P) PULSE SIGNAL
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  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
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  - (RB) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
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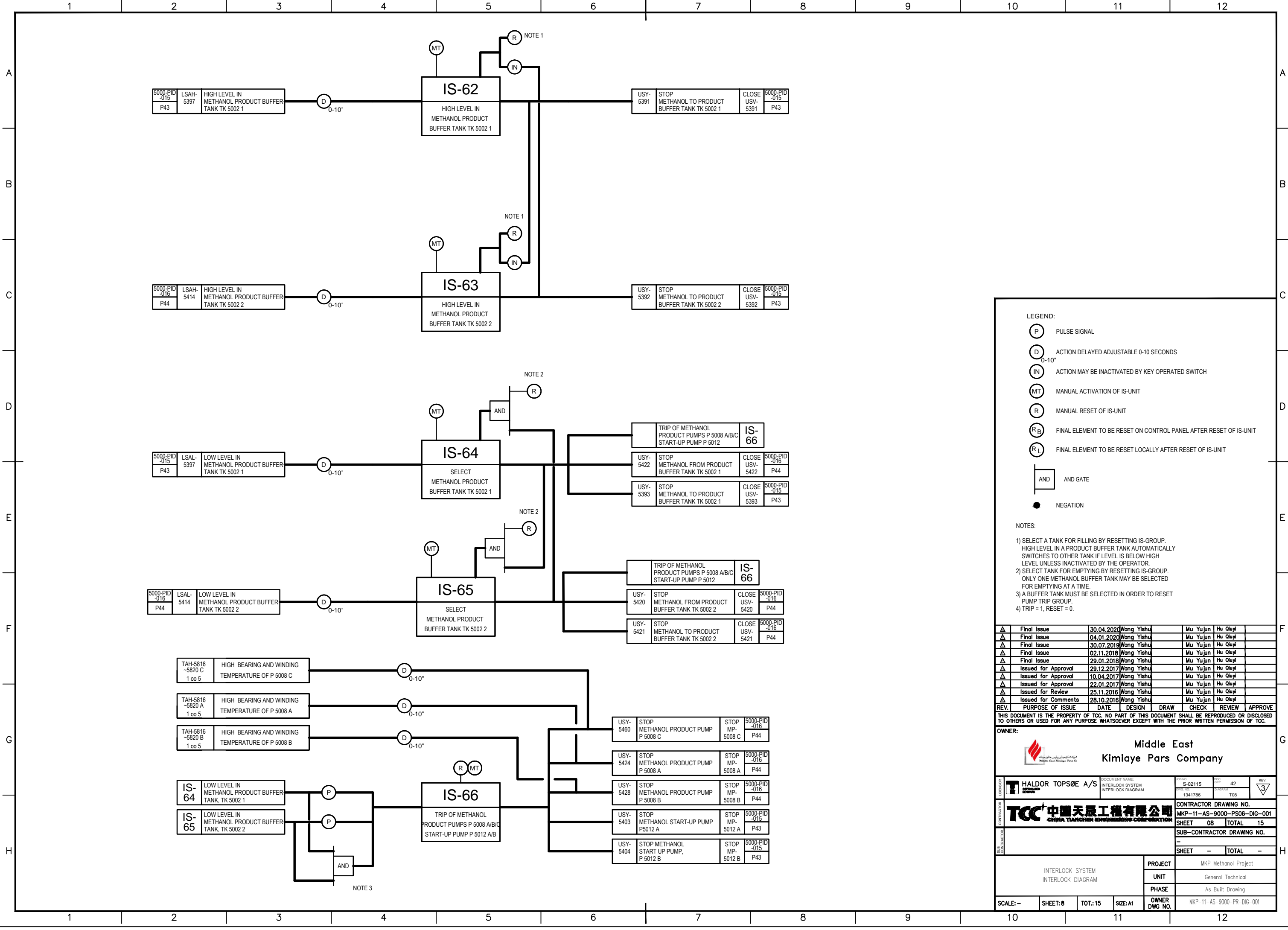
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▲	Final Issue	30.04.2020	Wang Yishu	Mu Yu jun	Hu Qiuyi		
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	CONTRACTOR 	CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS06-DIG-001	SHEET 07	TOTAL 15
SUB-CONTRACTOR 		SUB-CONTRACTOR DRAWING NO. 		SHEET 
INTERLOCK SYSTEM INTERLOCK DIAGRAM		PROJECT MKP Methanol Project		
SCALE: -		SHEET: 7	TOT.: 15	SIZE: A1
		UNIT General Technical		
		PHASE As Built Drawing		
		OWNER MKP-11-AS-9000-PR-DIG-001		



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  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
  - AND AND GATE
  - NEGATION

- NOTES:**
- 1) SELECT A TANK FOR FILLING BY RESETTING IS-GROUP. HIGH LEVEL IN A PRODUCT BUFFER TANK AUTOMATICALLY SWITCHES TO OTHER TANK IF LEVEL IS BELOW HIGH LEVEL UNLESS INACTIVATED BY THE OPERATOR.
  - 2) SELECT TANK FOR EMPTYING BY RESETTING IS-GROUP. ONLY ONE METHANOL BUFFER TANK MAY BE SELECTED FOR EMPTYING AT A TIME.
  - 3) A BUFFER TANK MUST BE SELECTED IN ORDER TO RESET PUMP TRIP GROUP.
  - 4) TRIP = 1, RESET = 0.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
△	Final Issue	30.04.2020	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Final Issue	04.01.2020	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Final Issue	30.07.2019	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Final Issue	02.11.2018	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Final Issue	29.01.2018	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Issued for Approval	29.12.2017	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Issued for Approval	10.04.2017	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Issued for Approval	22.01.2017	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Issued for Review	25.11.2016	Wang Yishu	Mu Yu jun	Hu Qiuyi		
△	Issued for Comments	28.10.2016	Wang Yishu	Mu Yu jun	Hu Qiuyi		

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**OWNER:**

**Middle East  
Kimiaye Pars Company**

**LENSOR:** HALDOR TOPSØE A/S

**CONTRACTOR:** TCC 中国天辰工程技术有限公司  
CHINA TIANCHEN ENGINEERING CORPORATION

**DOCUMENT NAME:** INTERLOCK SYSTEM INTERLOCK DIAGRAM

**FOR NO.:** S-02115

**ISSUE NO.:** 1341788

**CONTRACTOR DRAWING NO.:** MKP-11-AS-9000-PS06-DIG-001

**SHEET:** 08 **TOTAL:** 15

**SUB-CONTRACTOR DRAWING NO.:** -

**SHEET:** - **TOTAL:** -

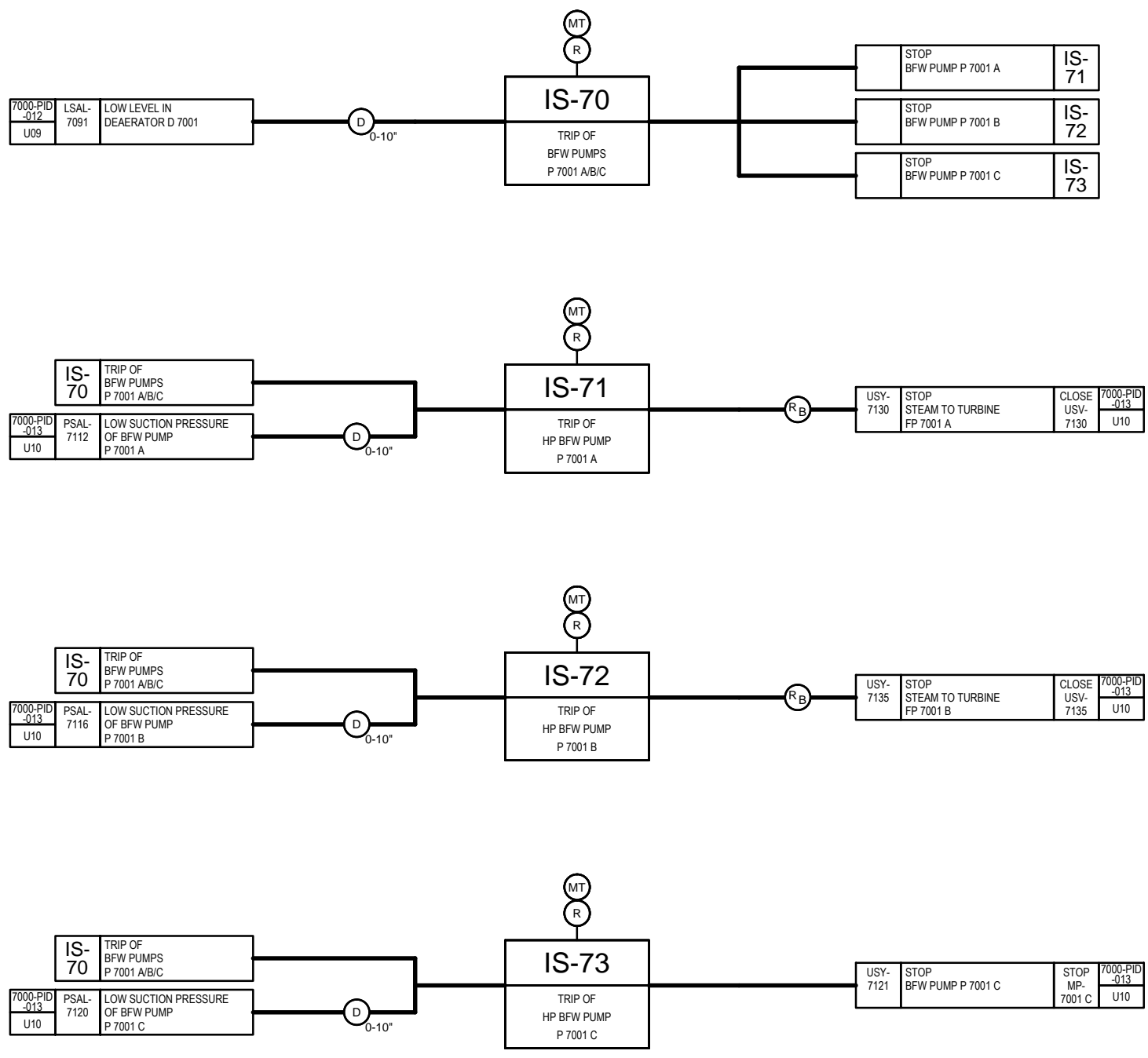
**PROJECT:** MKP Methanol Project

**UNIT:** General Technical

**PHASE:** As Built Drawing

**SCALE:** - **SHEET:** 8 **TOT.:** 15 **SIZE:** A1 **OWNER DWG NO.:** MKP-11-AS-9000-PR-DIG-001





- LEGEND:
- (P) PULSE SIGNAL
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT

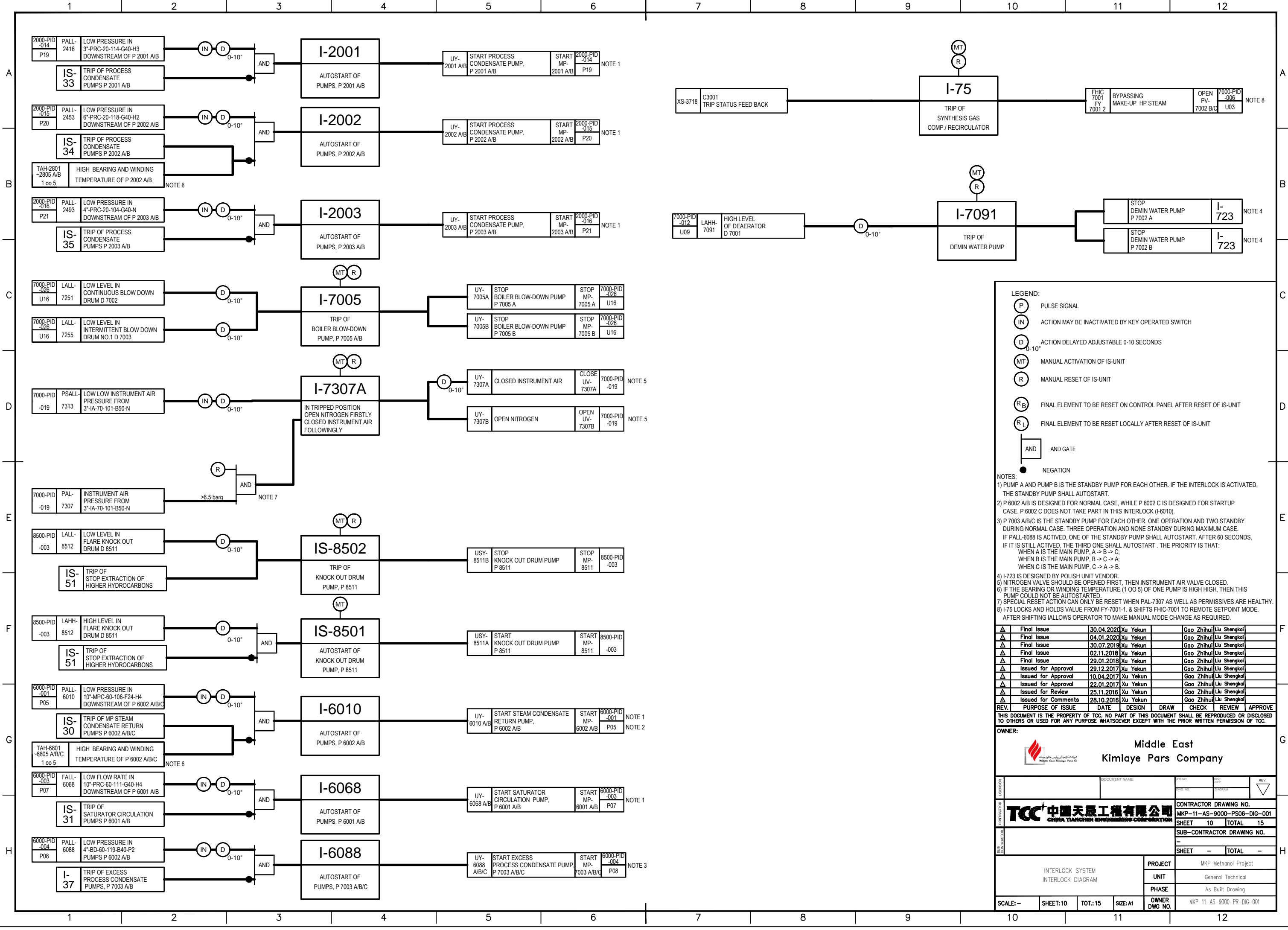
REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
△	Final Issue	30.04.2020	Chen Peng		Zhang Ning	Zhang Yushu	
△	Final Issue	04.01.2020	Chen Peng		Zhang Ning	Zhang Yushu	
△	Final Issue	04.01.2020	Chen Peng		Zhang Ning	Zhang Yushu	
△	Final Issue	30.07.2019	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Final Issue	02.11.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Final Issue	29.01.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Issued for Approval	29.12.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Issued for Approval	10.04.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Issued for Approval	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Issued for Review	25.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
△	Issued for Comments	28.10.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

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OWNER:

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**Kimiaye Pars Company**

LICENSOR <b>HALDOR TOPSØE A/S</b>	DOCUMENT NAME INTERLOCK SYSTEM INTERLOCK DIAGRAM	FOR NO. S-02115	DOC. NO. 42	REV. 01
		1341787	T09	
CONTRACTOR <b>TCC 中国天辰工程有限公司</b> CHINA TIANCHEN ENGINEERING CORPORATION	CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS06-DIG-001			
	SHEET 09		TOTAL 15	
SUB-CONTRACTOR	SUB-CONTRACTOR DRAWING NO.			
	SHEET -		TOTAL -	
INTERLOCK SYSTEM INTERLOCK DIAGRAM		PROJECT	MKP Methanol Project	
		UNIT	General Technical	
		PHASE	As Built Drawing	
SCALE: -	SHEET: 9	TOT.: 15	SIZE: A1	OWNER DWG NO. MKP-11-AS-9000-PR-DIG-001



- LEGEND:**
- (P) PULSE SIGNAL
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
  - AND AND GATE
  - NEGATION

- NOTES:**
- 1) PUMP A AND PUMP B IS THE STANDBY PUMP FOR EACH OTHER. IF THE INTERLOCK IS ACTIVATED, THE STANDBY PUMP SHALL AUTOSTART.
  - 2) P 6002 A/B IS DESIGNED FOR NORMAL CASE, WHILE P 6002 C IS DESIGNED FOR STARTUP CASE. P 6002 C DOES NOT TAKE PART IN THIS INTERLOCK (I-6010).
  - 3) P 7003 A/B/C IS THE STANDBY PUMP FOR EACH OTHER. ONE OPERATION AND TWO STANDBY DURING NORMAL CASE. THREE OPERATION AND NONE STANDBY DURING MAXIMUM CASE. IF PALL-6088 IS ACTIVATED, ONE OF THE STANDBY PUMP SHALL AUTOSTART. AFTER 60 SECONDS, IF IT IS STILL ACTIVATED, THE THIRD ONE SHALL AUTOSTART. THE PRIORITY IS THAT: WHEN A IS THE MAIN PUMP, A -> B -> C; WHEN B IS THE MAIN PUMP, B -> C -> A; WHEN C IS THE MAIN PUMP, C -> A -> B.
  - 4) I-723 IS DESIGNED BY POLISH UNIT VENDOR.
  - 5) NITROGEN VALVE SHOULD BE OPENED FIRST, THEN INSTRUMENT AIR VALVE CLOSED.
  - 6) IF THE BEARING OR WINDING TEMPERATURE (1 00 5) OF ONE PUMP IS HIGH HIGH, THEN THIS PUMP COULD NOT BE AUTOSTARTED.
  - 7) SPECIAL RESET ACTION CAN ONLY BE RESET WHEN PAL-7307 AS WELL AS PERMISSIVES ARE HEALTHY.
  - 8) I-75 LOCKS AND HOLDS VALUE FROM FY-7001-1. & SHIFTS FHC-7001 TO REMOTE SETPOINT MODE. AFTER SHIFTING I ALLOWS OPERATOR TO MAKE MANUAL MODE CHANGE AS REQUIRED.

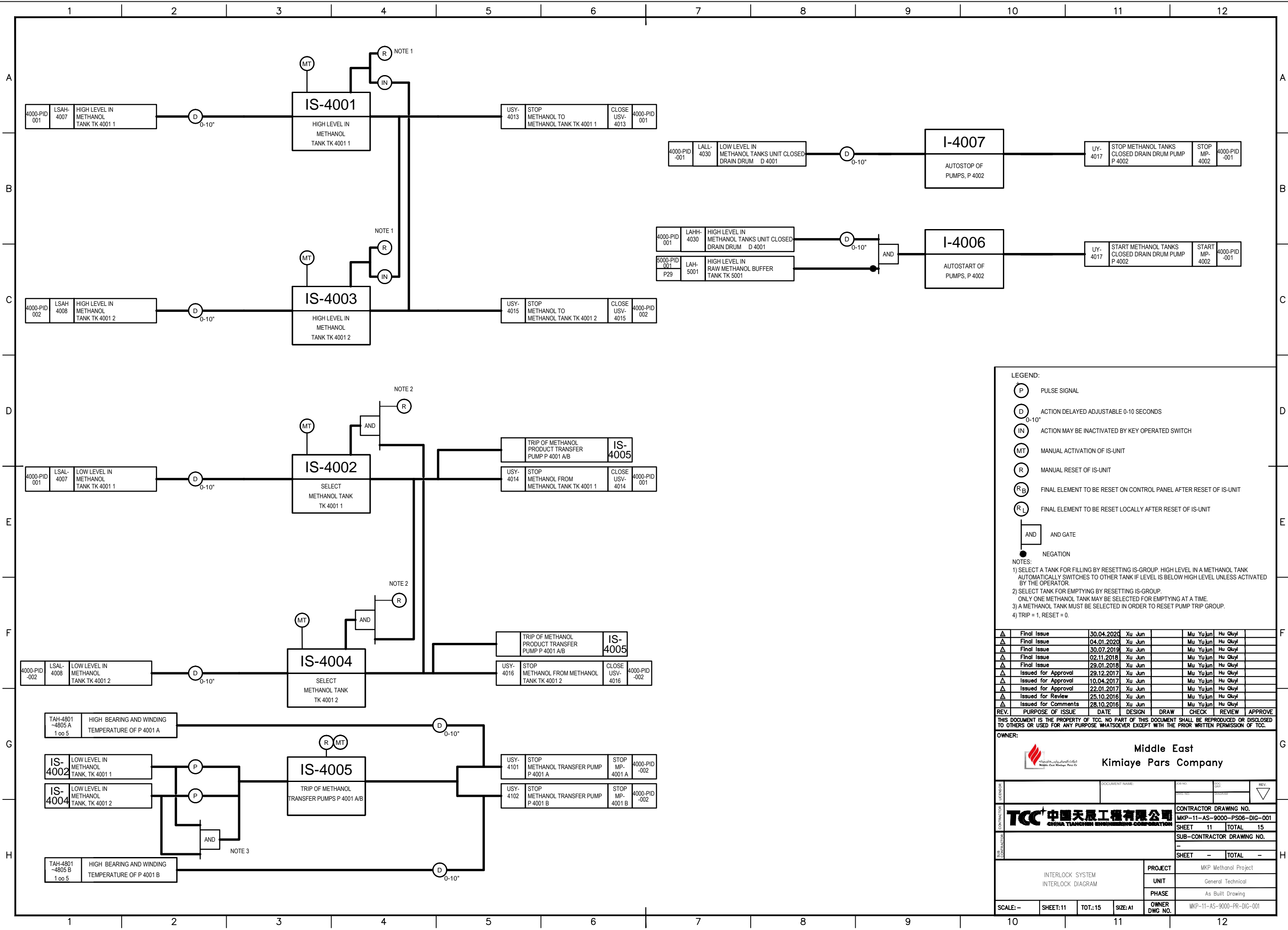
REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Final Issue	04.01.2020	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Final Issue	30.07.2019	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Final Issue	02.11.2018	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Final Issue	29.01.2018	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Issued for Approval	29.12.2017	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Issued for Approval	10.04.2017	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Issued for Approval	22.01.2017	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Issued for Review	25.11.2016	Xu Yekun	Gao Zhihui	Liu Shengkai		
Δ	Issued for Comments	28.10.2016	Xu Yekun	Gao Zhihui	Liu Shengkai		

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<p><b>TCC 中国天辰工程有限公司</b> CHINA TIANCHEN ENGINEERING CORPORATION</p>	<p>CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS06-DIG-001</p> <p>SHEET 10 TOTAL 15</p> <p>SUB-CONTRACTOR DRAWING NO. -</p> <p>SHEET - TOTAL -</p>
<p>INTERLOCK SYSTEM INTERLOCK DIAGRAM</p>	<p>PROJECT: MKP Methanol Project</p> <p>UNIT: General Technical</p> <p>PHASE: As Built Drawing</p>
<p>SCALE: -</p>	<p>SHEET: 10 TOT.: 15 SIZE: A1</p>
<p>OWNER DWG NO.</p>	<p>MKP-11-AS-9000-PR-DIG-001</p>



- LEGEND:**
- (P) PULSE SIGNAL
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
  - AND AND GATE
  - NEGATION

- NOTES:**
- 1) SELECT A TANK FOR FILLING BY RESETTING IS-GROUP. HIGH LEVEL IN A METHANOL TANK AUTOMATICALLY SWITCHES TO OTHER TANK IF LEVEL IS BELOW HIGH LEVEL UNLESS ACTIVATED BY THE OPERATOR.
  - 2) SELECT TANK FOR EMPTYING BY RESETTING IS-GROUP. ONLY ONE METHANOL TANK MAY BE SELECTED FOR EMPTYING AT A TIME.
  - 3) A METHANOL TANK MUST BE SELECTED IN ORDER TO RESET PUMP TRIP GROUP.
  - 4) TRIP = 1, RESET = 0.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Final Issue	04.01.2020	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Final Issue	30.07.2019	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Final Issue	02.11.2018	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Final Issue	29.01.2018	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Issued for Approval	29.12.2017	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Issued for Approval	10.04.2017	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Issued for Approval	22.01.2017	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Issued for Review	25.10.2016	Xu Jun		Mu Yujun	Hu Qiyi	
Δ	Issued for Comments	28.10.2016	Xu Jun		Mu Yujun	Hu Qiyi	

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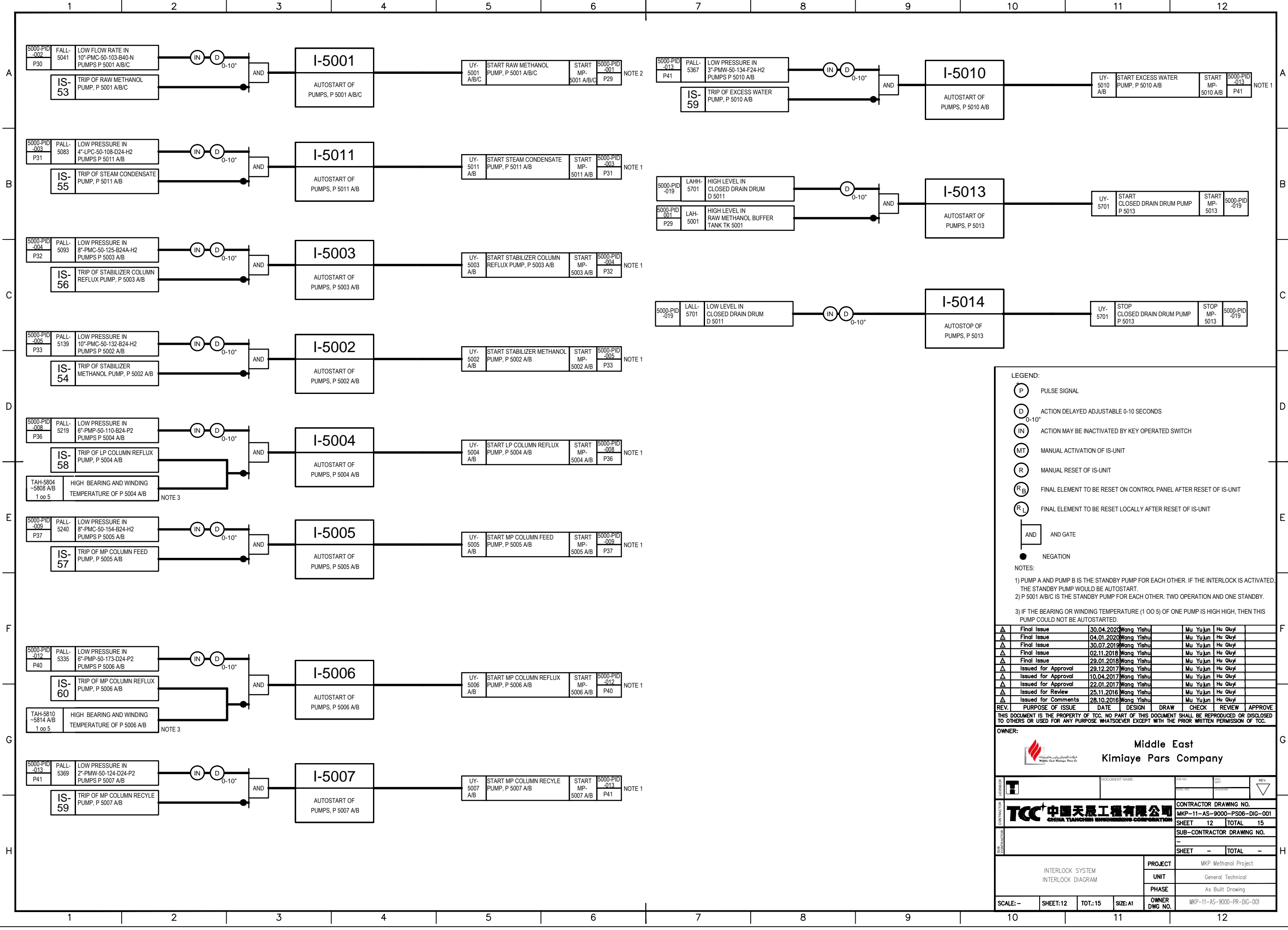
**OWNER:**

**Middle East  
Kimiaye Pars Company**

**CONTRACTOR:** TCC 中国天辰工程技术有限公司  
CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.	MKP-11-AS-9000-PS06-DIG-001
SHEET	11 TOTAL 15
SUB-CONTRACTOR DRAWING NO.	-
SHEET	- TOTAL -

PROJECT	MKP Methanol Project
UNIT	General Technical
PHASE	As Built Drawing
SCALE: -	SHEET: 11 TOT.: 15 SIZE: A1
OWNER DWG NO.	MKP-11-AS-9000-PR-DIG-001



- LEGEND:**
- (P) PULSE SIGNAL
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
- AND AND GATE
- NEGATION

**NOTES:**

1) PUMP A AND PUMP B IS THE STANDBY PUMP FOR EACH OTHER. IF THE INTERLOCK IS ACTIVATED, THE STANDBY PUMP WOULD BE AUTOSTART.

2) P 5001 A/B/C IS THE STANDBY PUMP FOR EACH OTHER. TWO OPERATION AND ONE STANDBY.

3) IF THE BEARING OR WINDING TEMPERATURE (1 00 5) OF ONE PUMP IS HIGH HIGH, THEN THIS PUMP COULD NOT BE AUTOSTARTED.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Final Issue	04.01.2020	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Final Issue	30.07.2019	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Final Issue	02.11.2018	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Final Issue	29.01.2018	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Issued for Approval	29.12.2017	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Issued for Approval	10.04.2017	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Issued for Approval	22.01.2017	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Issued for Review	25.11.2016	Wang Yishu		Mu Yu jun	Hu Qiyu	
Δ	Issued for Comments	28.10.2016	Wang Yishu		Mu Yu jun	Hu Qiyu	

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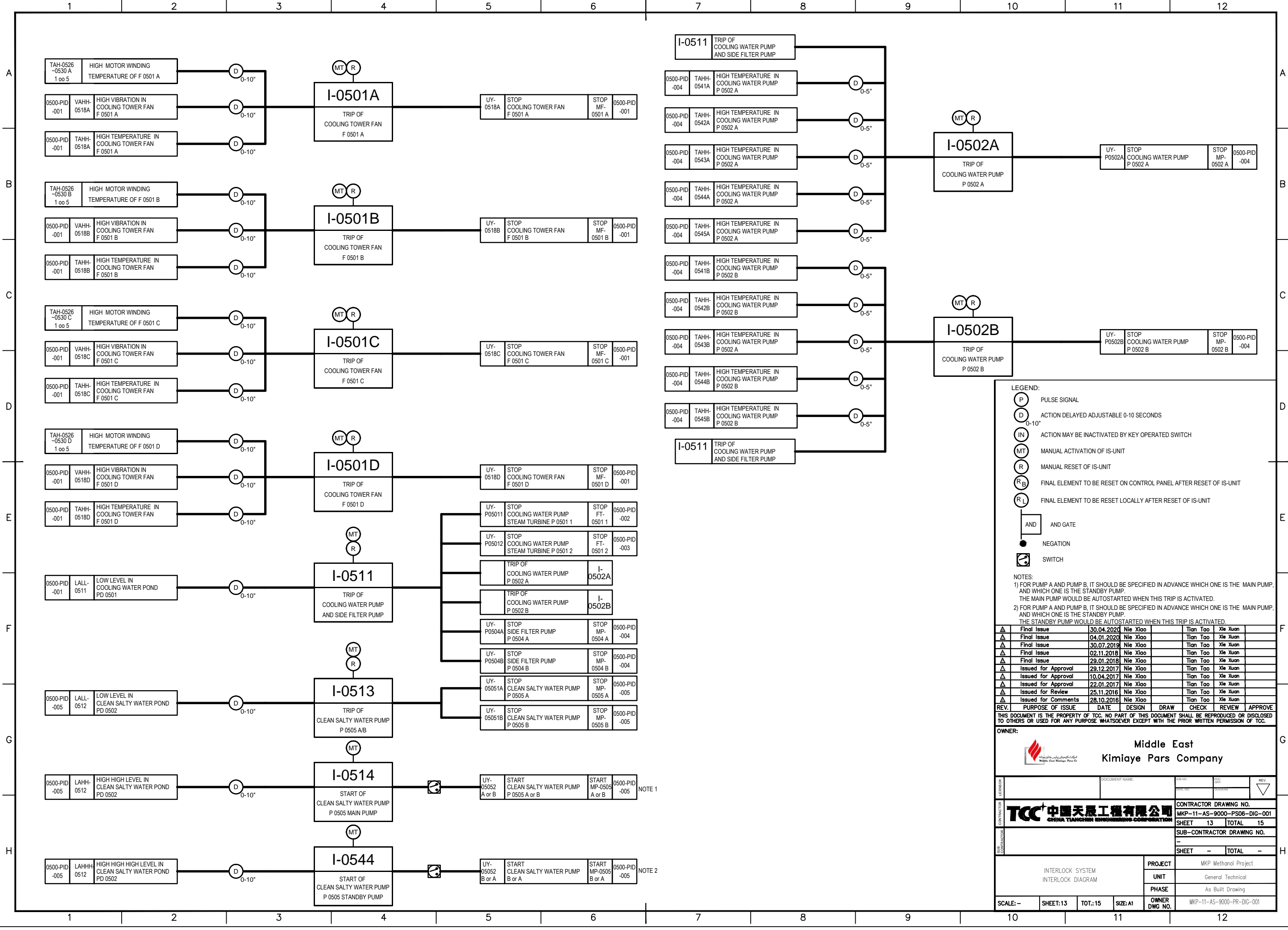
LENSOR	DOCUMENT NAME	FOR NO.	DATE	REV.
TCC				1

CONTRACTOR	CONTRACTOR DRAWING NO.
<b>TCC 中国天辰工程有限公司</b> CHINA TIANCHEN ENGINEERING CORPORATION	MKP-11-AS-9000-PS06-DIG-001
SHEET	TOTAL
12	15

SUB-CONTRACTOR	SUB-CONTRACTOR DRAWING NO.
SHEET	TOTAL

PROJECT	MKP Methanol Project
UNIT	General Technical
PHASE	As Built Drawing
SCALE: -	SHEET: 12
TOT.: 15	SIZE: A1
OWNER DWG NO.	MKP-11-AS-9000-PR-DIG-001





- LEGEND:**
- (P) PULSE SIGNAL
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT
  - AND AND GATE
  - NEGATION
  - SWITCH


**NOTES:**

- FOR PUMP A AND PUMP B, IT SHOULD BE SPECIFIED IN ADVANCE WHICH ONE IS THE MAIN PUMP, AND WHICH ONE IS THE STANDBY PUMP. THE MAIN PUMP WOULD BE AUTOSTARTED WHEN THIS TRIP IS ACTIVATED.
- FOR PUMP A AND PUMP B, IT SHOULD BE SPECIFIED IN ADVANCE WHICH ONE IS THE MAIN PUMP, AND WHICH ONE IS THE STANDBY PUMP. THE STANDBY PUMP WOULD BE AUTOSTARTED WHEN THIS TRIP IS ACTIVATED.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Final Issue	04.01.2020	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Final Issue	30.07.2019	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Final Issue	02.11.2018	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Final Issue	29.01.2018	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Issued for Approval	29.12.2017	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Issued for Approval	10.04.2017	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Issued for Approval	22.01.2017	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Issued for Review	25.11.2016	Nie Xiao	Tian Tao	Xie Xuan		
Δ	Issued for Comments	28.10.2016	Nie Xiao	Tian Tao	Xie Xuan		

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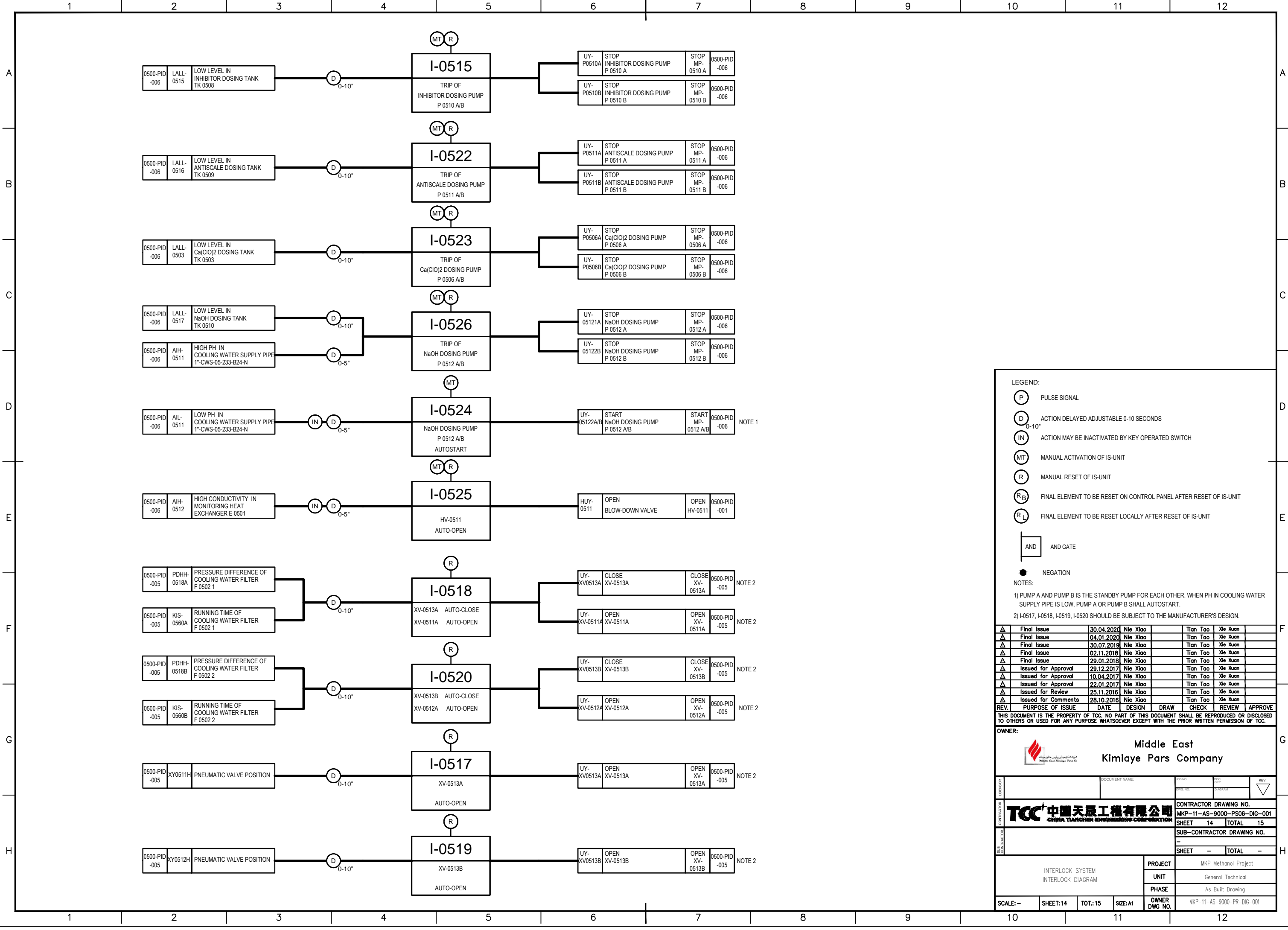
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LEASER	DOCUMENT NAME	FOR NO.	DATE	REV.
CONTRACTOR	<b>TCC 中国天辰工程有限公司</b> CHINA TIANCHEN ENGINEERING CORPORATION	CONTRACTOR DRAWING NO.	MKP-11-AS-9000-PS06-DIG-001	
SUB-CONTRACTOR		SHEET	13	TOTAL 15
		SUB-CONTRACTOR DRAWING NO.	-	
		SHEET	-	TOTAL -
INTERLOCK SYSTEM INTERLOCK DIAGRAM		PROJECT	MKP Methanol Project	
		UNIT	General Technical	
		PHASE	As Built Drawing	
SCALE: -	SHEET: 13	TOT.: 15	SIZE: A1	OWNER DWG NO. MKP-11-AS-9000-PR-DIG-001

NOTE 1

NOTE 2



- LEGEND:**
- (P) PULSE SIGNAL
  - (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
  - (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
  - (MT) MANUAL ACTIVATION OF IS-UNIT
  - (R) MANUAL RESET OF IS-UNIT
  - (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
  - (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT

- AND GATE**
- NEGATION**
- NOTES:**
- PUMP A AND PUMP B IS THE STANDBY PUMP FOR EACH OTHER. WHEN PH IN COOLING WATER SUPPLY PIPE IS LOW, PUMP A OR PUMP B SHALL AUTOSTART.
  - I-0517, I-0518, I-0519, I-0520 SHOULD BE SUBJECT TO THE MANUFACTURER'S DESIGN.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Δ	Final Issue	30.04.2020	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Final Issue	04.01.2020	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Final Issue	30.07.2019	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Final Issue	02.11.2018	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Final Issue	29.01.2018	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Issued for Approval	29.12.2017	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Issued for Approval	10.04.2017	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Issued for Approval	22.01.2017	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Issued for Review	25.11.2016	Nie Xiao		Tian Tao	Xie Xuan	
Δ	Issued for Comments	28.10.2016	Nie Xiao		Tian Tao	Xie Xuan	

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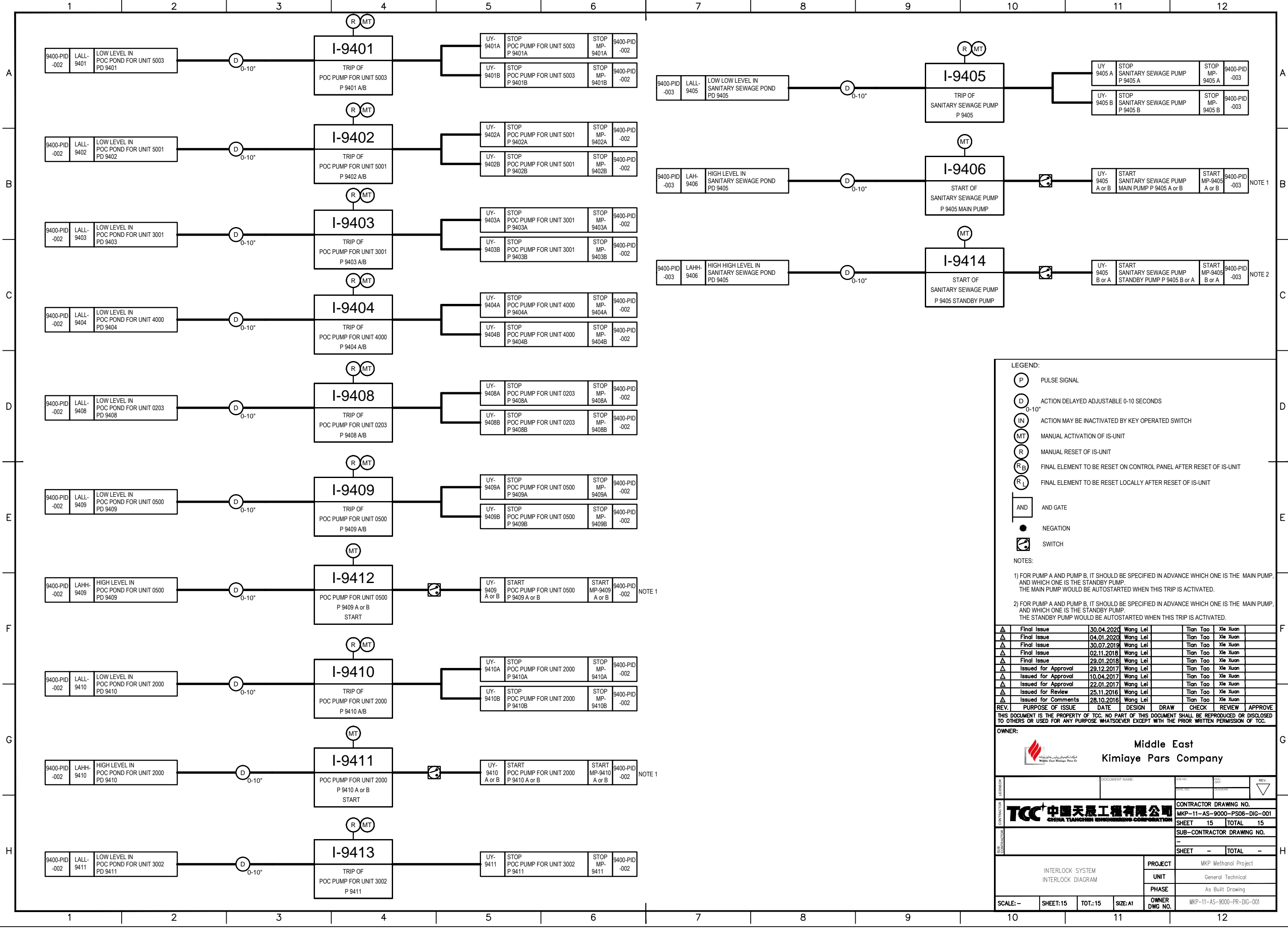
**Middle East  
Kimiaye Pars Company**

**CONTRACTOR:**

**TCC 中国天辰工程有限公司  
CHINA TIANCHEN ENGINEERING CORPORATION**

DOCUMENT NAME	FOR NO.	DATE	REV.
			1
<b>CONTRACTOR DRAWING NO.</b>		<b>CONTRACTOR</b>	
MKP-11-AS-9000-PS06-DIG-001		TCC	
<b>SHEET</b>		<b>TOTAL</b>	
14		15	
<b>SUB-CONTRACTOR DRAWING NO.</b>		<b>SUB-CONTRACTOR</b>	
<b>SHEET</b>		<b>TOTAL</b>	
<b>PROJECT</b>		<b>OWNER</b>	
INTERLOCK SYSTEM INTERLOCK DIAGRAM		MKP Methanol Project	
<b>UNIT</b>		<b>OWNER DWG NO.</b>	
General Technical		MKP-11-AS-9000-PR-DIG-001	
<b>PHASE</b>			
As Built Drawing			

SCALE: - SHEET: 14 TOT.: 15 SIZE: A1



**LEGEND:**

- (P) PULSE SIGNAL
- (D) ACTION DELAYED ADJUSTABLE 0-10 SECONDS
- (IN) ACTION MAY BE INACTIVATED BY KEY OPERATED SWITCH
- (MT) MANUAL ACTIVATION OF IS-UNIT
- (R) MANUAL RESET OF IS-UNIT
- (R<sub>B</sub>) FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT
- (R<sub>L</sub>) FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT

**AND** AND GATE

● NEGATION

☐ SWITCH

**NOTES:**

1) FOR PUMP A AND PUMP B, IT SHOULD BE SPECIFIED IN ADVANCE WHICH ONE IS THE MAIN PUMP, AND WHICH ONE IS THE STANDBY PUMP. THE MAIN PUMP WOULD BE AUTOSTARTED WHEN THIS TRIP IS ACTIVATED.

2) FOR PUMP A AND PUMP B, IT SHOULD BE SPECIFIED IN ADVANCE WHICH ONE IS THE MAIN PUMP, AND WHICH ONE IS THE STANDBY PUMP. THE STANDBY PUMP WOULD BE AUTOSTARTED WHEN THIS TRIP IS ACTIVATED.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
△	Final Issue	30.04.2020	Wang Lei		Tian Tao	Xie Xuan	
△	Final Issue	04.01.2020	Wang Lei		Tian Tao	Xie Xuan	
△	Final Issue	30.07.2019	Wang Lei		Tian Tao	Xie Xuan	
△	Final Issue	02.11.2018	Wang Lei		Tian Tao	Xie Xuan	
△	Final Issue	29.01.2018	Wang Lei		Tian Tao	Xie Xuan	
△	Issued for Approval	29.12.2017	Wang Lei		Tian Tao	Xie Xuan	
△	Issued for Approval	10.04.2017	Wang Lei		Tian Tao	Xie Xuan	
△	Issued for Approval	22.01.2017	Wang Lei		Tian Tao	Xie Xuan	
△	Issued for Review	25.11.2016	Wang Lei		Tian Tao	Xie Xuan	
△	Issued for Comments	28.10.2016	Wang Lei		Tian Tao	Xie Xuan	

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**OWNER:**

**Middle East  
Kimiaye Pars Company**

**CONTRACTOR:** TCC 中国天辰工程有限公司  
CHINA TIANCHEN ENGINEERING CORPORATION

**CONTRACTOR DRAWING NO.** MKP-11-AS-9000-PS06-DIG-001

**SHEET** 15 **TOTAL** 15

**SUB-CONTRACTOR DRAWING NO.** -

**SHEET** - **TOTAL** -

**PROJECT** MKP Methanol Project

**UNIT** General Technical

**PHASE** As Built Drawing

**SCALE:** - **SHEET:** 15 **TOT.:** 15 **SIZE:** A1 **OWNER DWG NO.** MKP-11-AS-9000-PR-DIG-001