



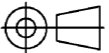

REVISIONS					
REV.	DESCRIPTION	REVD.	CHKD.	APPD.	DATE
1	Revised by our design progress.	T.Fujisawa 2014-03-28	N.Matsumoto 2014-03-28	N.Matsumoto	2014-03-28
2	Revised by customer comments.	T.Fujisawa 2014-04-29	N.Matsumoto 2014-04-29	N.Matsumoto	2014-04-29
3	Issue for Final.	T.Fujisawa 2015-12-22	Y.Kimura 2015-12-22	Y.Kimura	2015-12-22

H25 GAS TURBINE STARTUP AND SHUTDOWN BLOCK DIAGRAM



Final Drawing

0	Issue for Final	T.Fujisawa	Y.Kimura	Y.Kimura	M.Arai	2015-12-22
C	Issue for Approval	T.Fujisawa	N.Matsumoto	N.Matsumoto	M.Arai	2014-04-29
B	Issue for Approval	T.Fujisawa	N.Matsumoto	N.Matsumoto	M.Arai	2014-03-28
A	Issue for Approval	T.Fujisawa	N.Matsumoto	N.Matsumoto	M.Arai	2013-10-11
REV	DESCRIPTION	DRAWN	CHK'D	APP'D	PD	DATE
Company		Project Description		Contractor		
		EPC CPF Phase-2 at BADRA OIL FIELD		 SAMSUNG ENGINEERING		
Project No. GB090		Contract No. 090-13-BD-205-00		Job No. SG-2614		
Title						
H25 GAS TURBINE STARTUP AND SHUTDOWN BLOCK DIAGRAM						
Drawing -No.	GB090-4500125277-MP-D06-0001			Sheet 1	Sheets 8	Rev. 0
			Scale NTS			
			CAD file:			

Drawn : T.Fujisawa /2013-10-11 Name/Date		Title,supplementary title H25 GAS TURBINE STARTUP AND SHUTDOWN BLOCK DIAGRAM				
Checked : N.Matsumoto /2013-10-11 Name/Date						
Approved : N.Matsumoto /2013-10-11 Name/Date						
Responsible dep. Instrument & Control Department Hitachi I&C Engineering Section	Scale NTS		DWG. No. 310SD03-759	Rev. 3	Sheet 1/8	Date of issue 2015-12-22
						
	MITSUBISHI HITACHI POWER SYSTEMS,LTD. Engineering Head quarters Plant Engineering Division					

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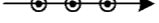

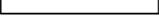





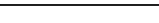


CONTENT	
PAGE NO.	SERVICE
1	COVER
2	CONTENT
3	STARTUP BLOCK DIAGRAM (1)
4	STARTUP BLOCK DIAGRAM (2)
5	STARTUP BLOCK DIAGRAM (3)
6	STARTUP BLOCK DIAGRAM (4)
7	STARTUP BLOCK DIAGRAM (5)
8	SHUTDOWN BLOCK DIAGRAM



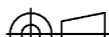

NOTE1 : <CUSTOMER' S TAG-NO.>
ASTERISKS() SHOWS THE GT-UNIT NO.**
36: UNIT NO.A, 37: UNIT NO.B, 38: UNIT NO.C,
39: UNIT NO.D, 40: UNIT NO.E

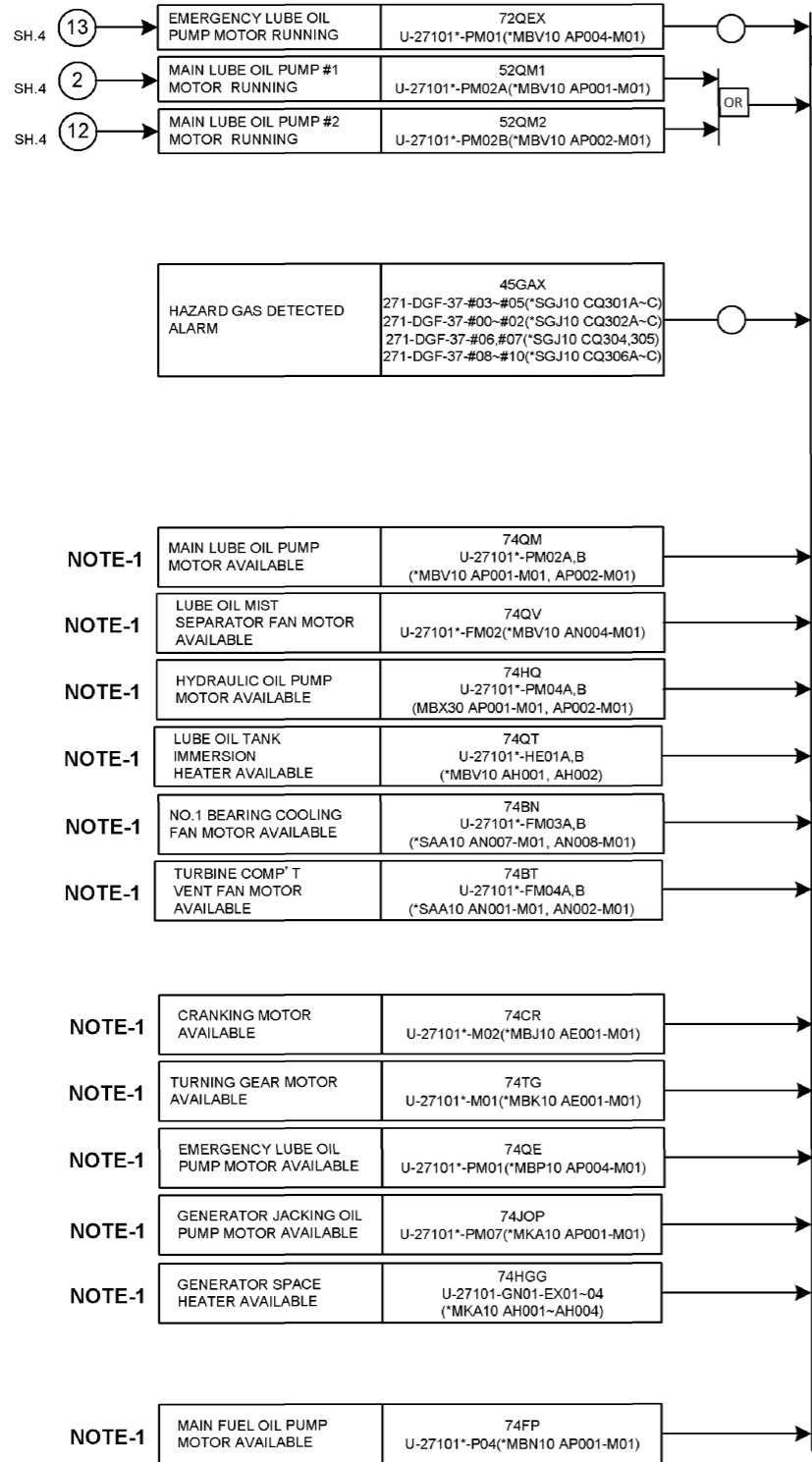
NOTE2 : <CUSTOMER' S TAG-NO>
ASTERISKS(*) SHOWS THE GT-UNIT NO.
A: UNIT NO.A, B: UNIT NO.B, C: UNIT NO.C,
D: UNIT NO.D, E: UNIT NO.E

NOTE3 : <CUSTOMER' S TAG-NO.>
OCTOTHORPE(#) SHOWS THE GT-UNIT NO.
1: UNIT NO.A, 2: UNIT NO.B, 3: UNIT NO.C,
4: UNIT NO.D, 5: UNIT NO.E

NOTE4 : <MHPS' S TAG-NO.>
ASTERISKS(*) SHOWS THE GT-UNIT NO.
A: UNIT NO.A, B: UNIT NO.B, C: UNIT NO.C,
D: UNIT NO.D, E: UNIT NO.E

SYMBOL	
SYMBOL	DESCRIPTION
	CONTINUOUS LINE ON DRAWING INDICATES SEQUENCE BY MEANS OF ELECTRONIC CIRCUIT.
	THIS TYPE OF LINE ON DRAWING INDICATES SEQUENCE BY MEANS OF MECHANICAL SEQUENCE.
	CATHODE-RAY TUBE (HMI)
	ALARM
	MANUAL OPERATION
	"AND" GATE
	"OR" GATE
	"NOT" GATE
	TIMER (DELAY PICK UP) t= SETTING TIME
	TIMER (DELAY DROP OUT) t= SETTING TIME
	LOGIC CONTINUATION (DESTINATION) n : CONNECTION POINT NUMBER N : PAGE No.
	LOGIC CONTINUATION (DEPARTURE) n : CONNECTION POINT NUMBER N : PAGE No.

Company 		Project Description EPC CPF Phase-2 at BADRA OIL FIELD				Contractor  SAMSUNG ENGINEERING		Responsible dep. Instrument & Control Department Hitachi I&C Engineering Section				Scale NTS		DWG. No. 310SD03-759		Rev. 2	Sheet 2/8	Date of issue	
Project No. GB090		Contract No. 090-13-BD-205-00		Job No. SG-2614		 MITSUBISHI HITACHI POWER SYSTEMS,LTD. Engineering Head quarters Plant Engineering Division													
Drawing -No. GB090-4500125277-MP-D06-0001		Sheet 2	Sheets 8	Rev. 0	Scale NTS														
															CAD SOFTWARE	MS VISIO	SIZE DESIGNATION	A3	



NOTE-3

SH.7 (4)

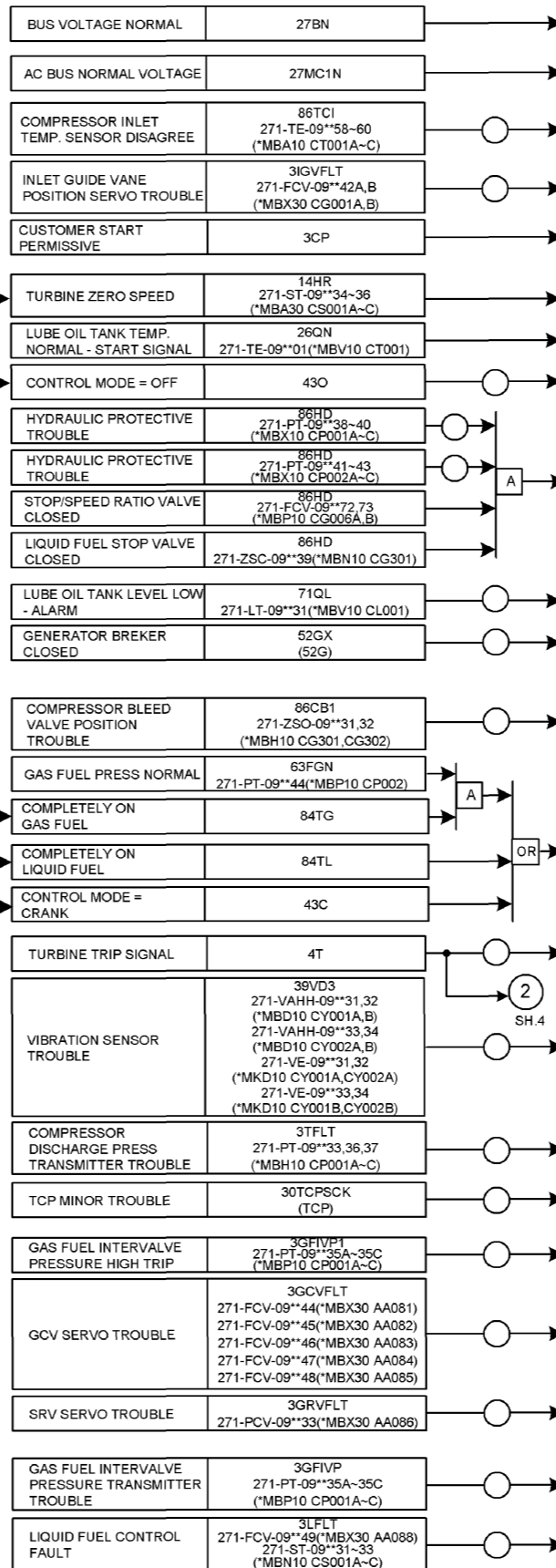
SH.4 (20)

SH.7 (2)

SH.7 (3)

SH.4 (21)

NOTE-2







NOTE-1: "AVAILABLE" IS COMPOSED OF "AUTO MODE (AND/OR OPERATING POSITION)" AND "NOT ELECTRICAL TROUBLE".

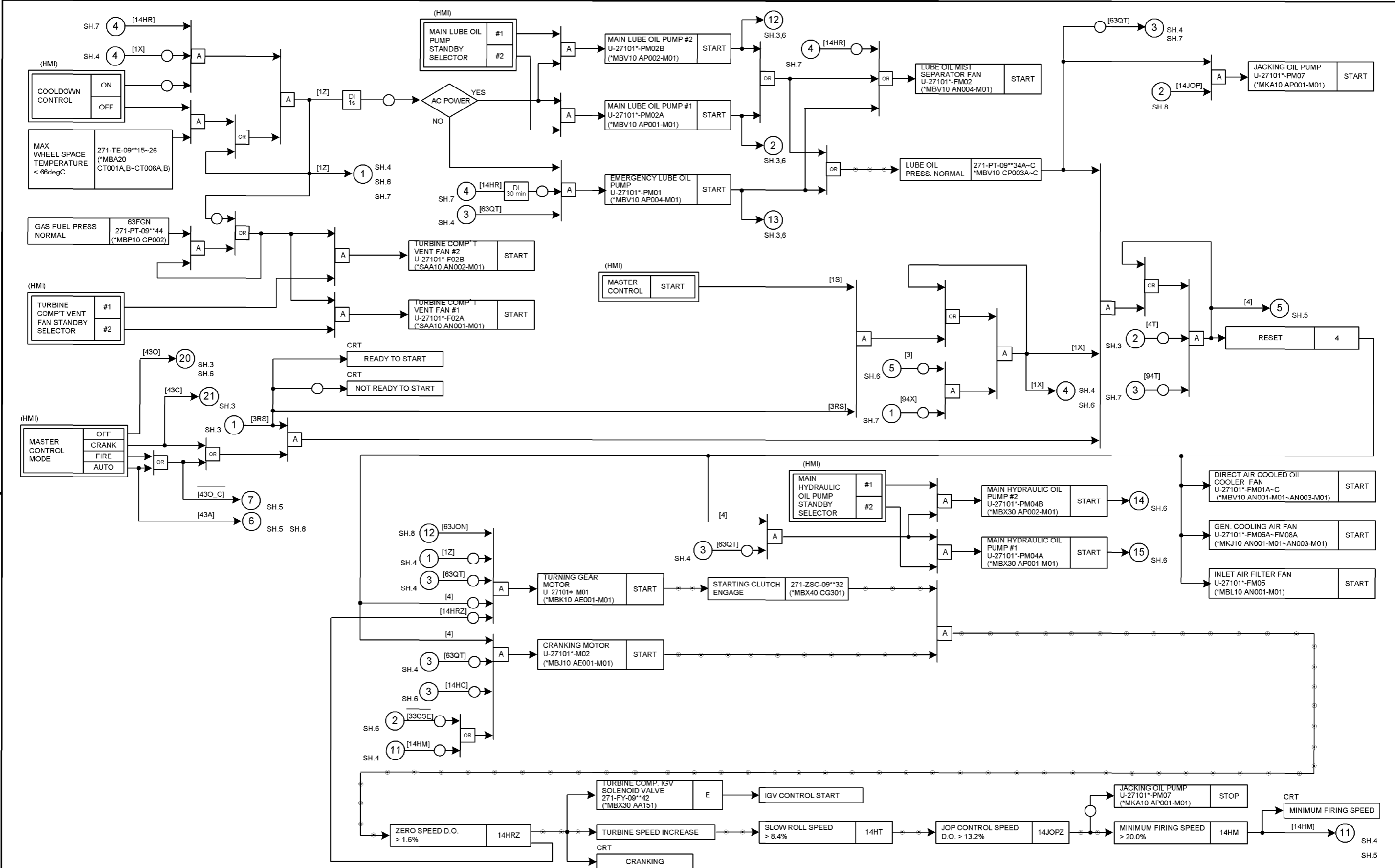
NOTE-2: REFER TO "GAS TURBINE TRIPPING LOGIC DIAGRAM (H25 GAS TURBINE GENERATOR)"
D# GB090-4500125277-MP-D05-0003 (310SD03-752) FOR DETAILS.

NOTE-3: CUSTOMER START PERMISSIVE SIGNAL




This signal(3CP) is supplied by CUSTOMER.

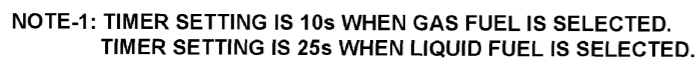
STARTUP BLOCK DIAGRAM - 1

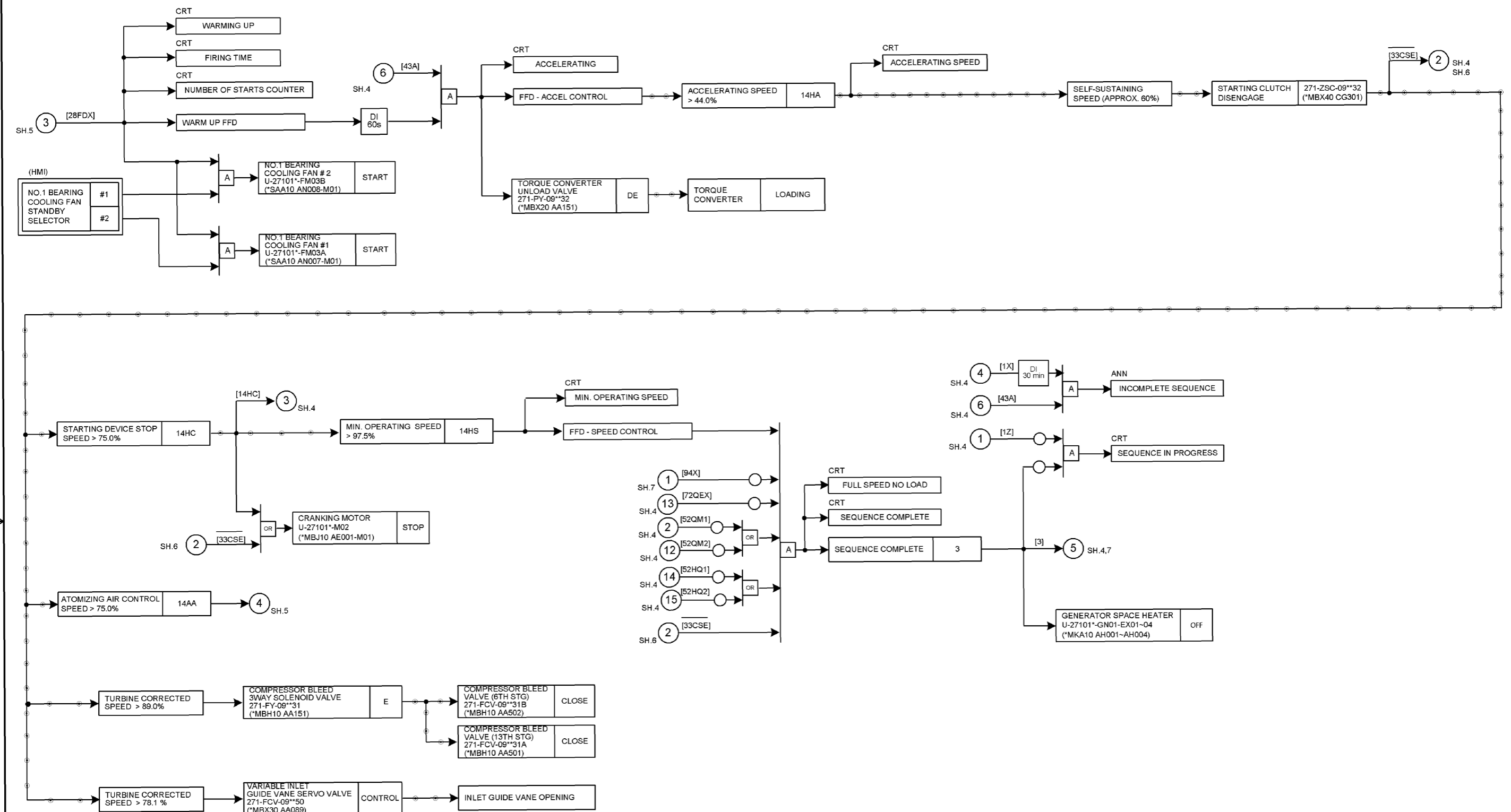
Company 		Project Description EPC CPF Phase-2 at BADRA OIL FIELD		Contractor  SAMSUNG ENGINEERING		Responsible dep. Instrument & Control Department Hitachi I&C Engineering Section		Scale NTS				DWG. No. 310SD03-759		Rev. 2		Sheet 3/8		Date of issue	
Project No. GB090		Contract No. 090-13-BD-205-00		Job No. SG-2614				 MITSUBISHI HITACHI POWER SYSTEMS,LTD. Engineering Head quarters Plant Engineering Division											
Drawing -No. GB090-4500125277-MP-D06-0001				Sheet 3															
												CAD SOFTWARE		MS VISIO		SIZE DESIGNATION		A3	



STARTUP BLOCK DIAGRAM - 2

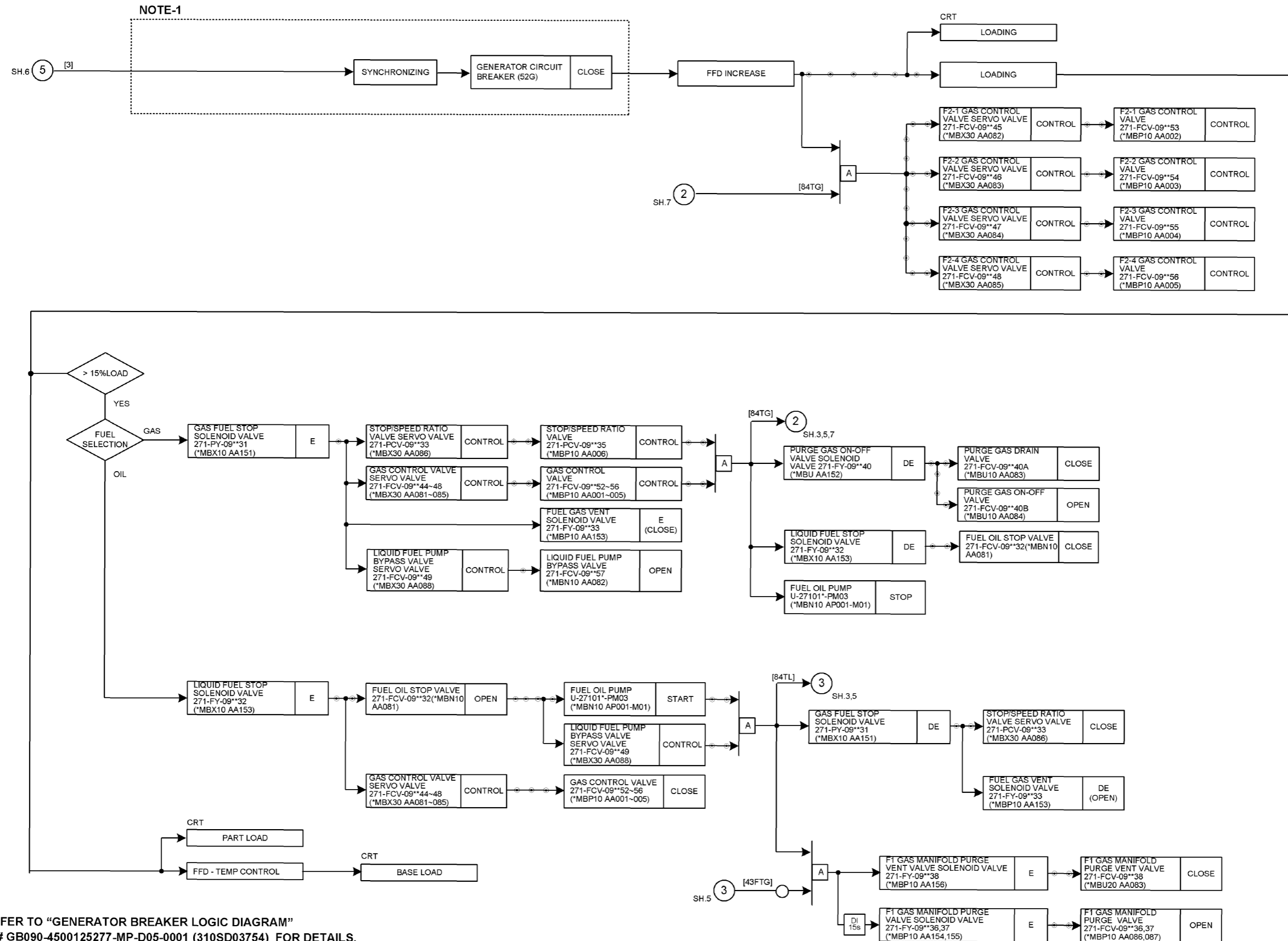
<p>Company</p>  <p>Project No. GB090</p> <p>Drawing No. GB090-4500125277-MP-D06-0001</p>	<p>Project Description</p> <p>EPC CPF Phase-2 at BADRA OIL FIELD</p> <p>Contract No. 090-13-BD-205-00</p>	<p>Contractor</p>  <p>SAMSUNG ENGINEERING</p> <p>Job No. SG-2614</p> <p>Sheet 4 of 8</p>	<p>Responsible dep.</p> <p>Instrument & Control Department</p> <p>Hitachi I&C Engineering Section</p>	<p>Scale</p> <p>NTS</p> 	<p>DWG. No. 310SD03-759</p> <p>MITSUBISHI HITACHI POWER SYSTEMS, LTD.</p> <p>Engineering Head quarters</p> <p>Plant Engineering Division</p>	<p>Rev. 2</p> <p>Sheet 4/8</p>	<p>Date of issue</p>
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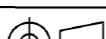

STARTUP BLOCK DIAGRAM - 4

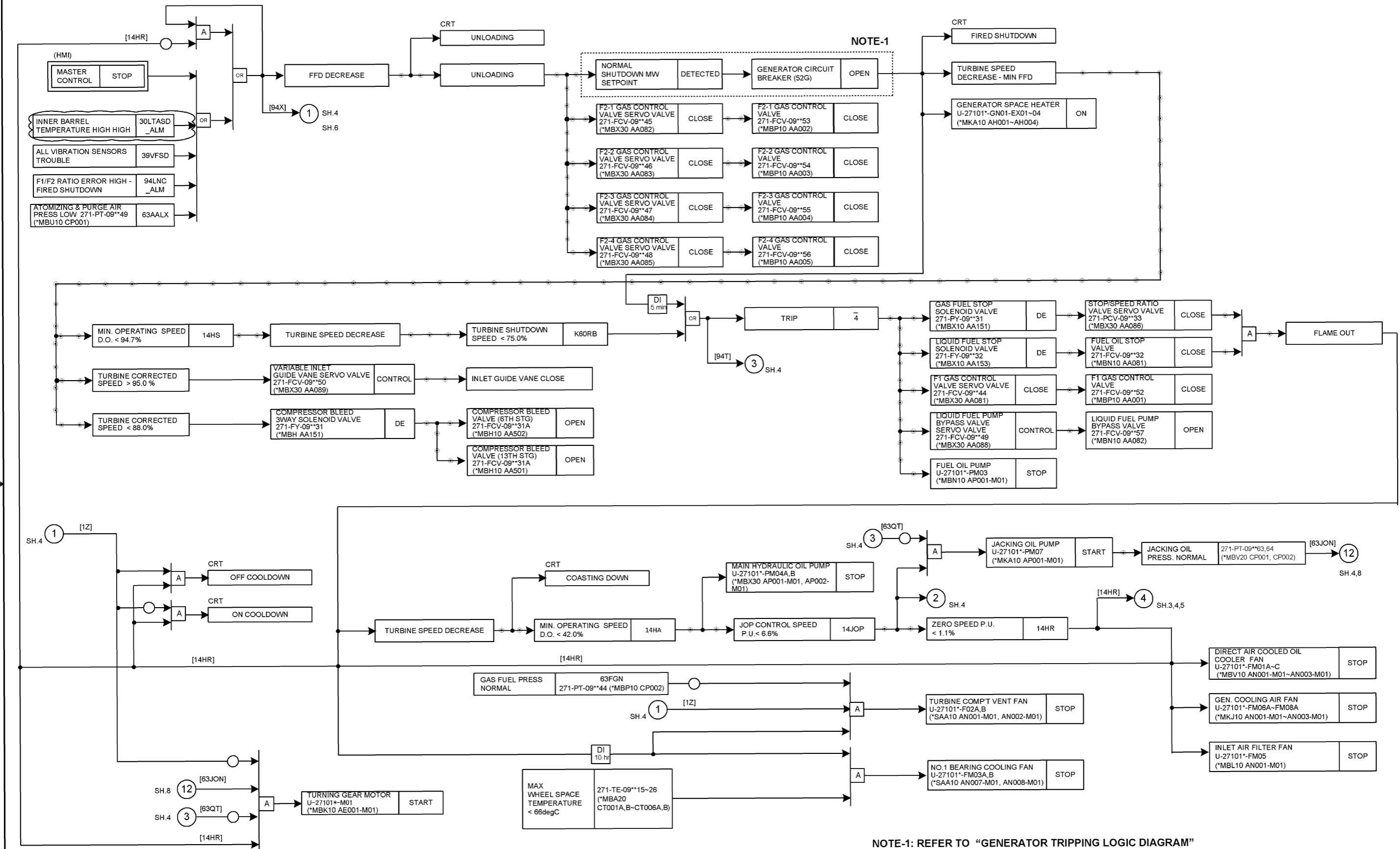
Company 	Project Description EPC CPF Phase-2 at BADRA OIL FIELD	Contractor SAMSUNG ENGINEERING	Responsible dep. Instrument & Control Department Hitachi I&C Engineering Section	Scale NTS		DWG. No. 310SD03-759	Rev. 2	Sheet 6/8	Date of issue
Project No. GB090	Contract No. 090-13-BD-205-00	Job No. SG-2614		MITSUBISHI HITACHI POWER SYSTEMS, LTD. Engineering Head quarters Plant Engineering Division					
Drawing -No. GB090-4500125277-MP-D06-0001	Sheet 6	Scale NTS					CAD SOFTWARE MS VISIO	SIZE DESIGNATION A3	



NOTE-1: REFER TO "GENERATOR BREAKER LOGIC DIAGRAM"
D# GB090-4500125277-MP-D05-0001 (310SD03754) FOR DETAILS.

STARTUP BLOCK DIAGRAM - 5

Company 		Project Description EPC CPF Phase-2 at BADRA OIL FIELD		Contractor 		Responsible dep. Instrument & Control Department Hitachi I&C Engineering Section		Scale NTS		DWG. No. 310SD03-759		Rev. 2	Sheet 7/8	Date of issue	
Project No. GB090		Contract No. 090-13-BD-205-00		Job No. SG-2614				 MITSUBISHI HITACHI POWER SYSTEMS,LTD. Engineering Head quarters Plant Engineering Division							
Drawing -No. GB090-4500125277-MP-D06-0001		Sheet 7	Sheets 8	Rev. 0	Scale NTS										
											CAD SOFTWARE	MS VISIO	SIZE DESIGNATION	A3	



NOTE-1: REFER TO "GENERATOR TRIPPING LOGIC DIAGRAM"
D# GB090-4500125277-MP-D05-0001 (310QC62-577) FOR DETAILS.