

As-Built

ABO	24-JUL-2023	As-Built	<i>K. Saito</i> K. Saito	<i>T. Saito</i> T. Saito	<i>M. Nagamura</i> M. Nagamura
REV	DATE	DESCRIPTION	Approved	Checked	Prepared

OWNER



VAN PHONG POWER COMPANY LIMITED

PROJECT

Van Phong 1 BOT Thermal Power Plant Project

OWNER'S ENGINEER

AFRY Switzerland Ltd.



AFRY

Status

- ☐ Approved
- ☐ Approved with Comment
- ☐ Not Approved
- ☐ Reviewed
- ☐ Reviewed with Comment

EPC CONTRACTORS

IHI-TESSC-CTCI-DHI CONSORTIUM

IHI

TOSHIBA

CTCI

中興工程股份有限公司
CTCI Corporation



PROJECT DOCUMENT No

VP1-C-L2-I-CJJ-00012

REV

ABO

DOCUMENT TITLE

MAIN TURBINE DEHC CONTROL BLOCK DIAGRAM

EPC

TOSHIBA

Toshiba Energy Systems & Solutions Corporation

EPC DOCUMENT No.

7K2K1689

REV




2

御注文主 CUSTOMER Van Phong Power Company Limited
Van Phong 1 BOT Thermal Power Plant Project

製 番 JOB No. M211087/M211088 FL 3582

MAIN TURBINE DEHC CONTROL
BLOCK DIAGRAM

AS BUILT

OWNER 	
PROJECT TITLE Van Phong 1 BOT Thermal Power Plant Project	
OWNER'S ENGINEER AFRY Switzerland Ltd. 	Status <input type="checkbox"/> Approved <input type="checkbox"/> Approved with Comments <input type="checkbox"/> Not Approved <input type="checkbox"/> Reviewed <input type="checkbox"/> Reviewed with Comment
EPC CONTRACTORS IHI-TOSHIBA-CTCI-DHI CONSORTIUM 	
PROJECT DRAWING NO. VP1-C-L2-I-CJJ-00012	REV AB0
DRAWING TITLE MAIN TURBINE DEHC CONTROL BLOCK DIAGRAM	

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

TOTAL83SHEETS			SH
承認 APPROVED BY K. Saito Jun. 28. 21 K. Takahashi Jun. 28. 21	調査 CHECKED BY T. Saito Jun. 28. 21 K. Takahashi Jun. 28. 21	設計 DESIGNED BY R. Fujiwara N. Yasuda Jun. 28. 21	COVER
F 保管 REGISTERED			7K2K1689 -001
			変更記号 REV. MARK 2

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008		SUMMARY OF SYMBOL(3)	033			058		OPERATION SIGNAL(5)	083		FLR
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010			035		CV CONTROL	060		OPERATION SIGNAL(7)	085		ALR OPERATION(2)
011		EXPLANATION OF HARDWIRED I/O POINTS	036		CV A POSITION CONTROL	061			086		
012			037		CV B POSITION CONTROL	062			087		
013			038			063			088		GOV/LL TRANSFER
014			039			064		TARGET SPEED(1)	089		
015			040		RSV CONTROL	065		TARGET SPEED(2)	090		
016			041		RSV(A) POSITION CONTROL	066		TARGET SPEED(3)	091		HOUSE LOAD OPERATION
017		TURBINE SPEED INPUT	042		RSV(B) POSITION CONTROL	067			092		
018		SPEED REFERENCE(1)	043		ICV CONTROL	068		ACCELERATION RATE	093		
019		SPEED REFERENCE(2)	044		ICV A POSITION CONTROL	069			094		
020			045		ICV B POSITION CONTROL	070			095		
021		LOAD REFERENCE(1)	046			071			096		
022		LOAD REFERENCE(2)	047			072		LINE SPEED MATCHER	097		
023		MN STEAM PRESSURE	048		3 : 1 FLOW FUNCTION	073		HP IPR	098		THERMAL STRESS
024		LOAD DETECT	049			074			099		
025		AUTOMATIC LOAD REGULATOR	050			075			100		

	REV. 2

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調査 CHECKED BY T. S/K. T Jun. 25. 21		設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21		CONTENTS(1) 7K2K1689 -002
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ページ PAGE	変更順記号 REV.	題 目 TITLE	ページ PAGE	変更順記号 REV.	題 目 TITLE	ページ PAGE	変更順記号 REV.	題 目 TITLE	ページ PAGE	変更順記号 REV.	題 目 TITLE
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120		BACKUP OVERSPEED CIRCUIT TEST	145			170			195		
121			146			171			196		REVISION LIST
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124			149			174			199		REVISIONS
125			150			175			200		

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SYMBOL	FUNCTION	REMARK	SYMBOL	FUNCTION	REMARK	SYMBOL	FUNCTION	REMARK								
	ADD FUNCTION	Y=X1+X2		RATE LIMITER			SIGNAL MONITOR LOW STATE									
	SUBTRACTION FUNCTION	Y=X1-X2		UPPER LIMITER HL=HL1	<table><tr><th>Input X</th><th>Output Y</th></tr><tr><td>X < HL1</td><td>Y = X</td></tr><tr><td>X ≥ HL1</td><td>Y = HL1</td></tr></table>	Input X	Output Y	X < HL1	Y = X	X ≥ HL1	Y = HL1		TRANSFER SWITCH SW=1: Y=X1 SW=0: Y=X2			
Input X	Output Y															
X < HL1	Y = X															
X ≥ HL1	Y = HL1															
	MULTIPLY FUNCTION	Y=X1 · X2		LOWER LIMITER LL=LL1	<table><tr><th>Input X</th><th>Output Y</th></tr><tr><td>X > LL1</td><td>Y = X</td></tr><tr><td>X ≤ LL1</td><td>Y = LL1</td></tr></table>	Input X	Output Y	X > LL1	Y = X	X ≤ LL1	Y = LL1		NOT			
Input X	Output Y															
X > LL1	Y = X															
X ≤ LL1	Y = LL1															
	REVERSE	Y=-1 · X		ABSOLUTE VALUE	Y= X		OR									
	PROPORTIONAL	Y=K · X		DEAD BAND			LOGIC MEMORY FUNCTION FLIP FLOP									
	INTEGRATION (WITH RESET FUNCTION)	SW=1: $Y=\frac{1}{Ts} X$ (T: TIME CONSTANT) SW=0 Y=T					TIME DELAY PICK UP									
	DERIVATIVE ACTION	$Y=\frac{Ts}{1+Ts} X$		HIGH VALUE SELECTING	Y=MAX (X1, X2)		TIME DELAY DROP OUT									
	SIGNAL GENERATOR	Y=A		MIDDLE VALUE SELECTING	Y=MED (X1, X2, X3)		SINGLE SHOT TIMER									
	FUNCTION GENERATOR	<table><tr><th>Input X</th><th>Output Y</th></tr><tr><td>X < X1</td><td>Y = Y1</td></tr><tr><td>X1 ≤ X ≤ X15</td><td>Y = F(X) 15 break points</td></tr><tr><td>X > X15</td><td>Y = Y15</td></tr></table> (X1 ≤ Xi+1 (i=1~14))	Input X	Output Y	X < X1	Y = Y1	X1 ≤ X ≤ X15	Y = F(X) 15 break points	X > X15	Y = Y15		LOW VALUE SELECTING	Y=MIN (X1, X2)		FLICKER	
Input X	Output Y															
X < X1	Y = Y1															
X1 ≤ X ≤ X15	Y = F(X) 15 break points															
X > X15	Y = Y15															
	FIRST DELAY FUNCTION			SIGNAL MONITOR HIGH/LOW STATE			LOGIC MEMORY FUNCTION									
	LEAD LAG FUNCTION			SIGNAL MONITOR HIGH STATE			2 OUT OF 3									

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SYMBOL	FUNCTION	REMARK	SYMBOL	FUNCTION	REMARK	SYMBOL	FUNCTION	REMARK
	MEMORY			ANALOG INPUT CHECK			BALANCING FUNCTION	
	ANALOG MEMORY			DIGITAL INPUT			TRANSFORMER	
	DIVIDING FUNCTION	$Y = \frac{X1}{X2}$		DIGITAL OUTPUT				
	DEAD TIME			ANALOG INPUT				
				ANALOG OUTPUT				
				SERIAL INPUT				
				SERIAL OUTPUT				
	BUMP LESS TRANSFER			FREQUENCY INPUT CHECK				
				POWER AMP.				
				ISOLATOR				
				FREQUENCY TO DIGITAL CONVERTER				

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






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T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
----/ R. F
N. Y
Jun. 25. 21




SUMMARY OF SYMBOL (2)

7K2K1689 -007

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SYMBOL	FUNCTION	REMARK	SYMBOL	FUNCTION	REMARK	SYMBOL	FUNCTION	REMARK
				UNINTERRUPTIBLE POWER SUPPLY SYSTEM				
	SERVO VALVE			CENTRAL CONTROL ROOM				
	LINEAR VOLTAGE DIFFERENTIAL TRANSFORMER			LOCAL INSTRUMENT				
	TRANSFERED SIGNAL	ANALOG SIGNAL AND POWER SIGNAL		DISTRIBUTED CONTROL SYSTEM				
				OPERATOR STATION				
				GENERATOR CIRCUIT BREAKER				
				AUTOMATIC VOLTAGE REGULATOR				
				ELECTRICAL CONTROL CUBICLE A				
				TURBINE SUPERVISORY INSTRUMENT PANEL				
				GENERATOR CONTROL PANEL				
				INITIAL EXCITATION CUBICLE				

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	REV. 2

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




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ABBREVIATION	MEANING				
FDCL01	FREQUENCY DETECTION MODULE				
PLUL01	POWER LOAD UNBALANCE MODULE				
VPCL01	VALVE CONTROL MODULE				
HTML01	HARD TRIP MODULE				
TSVL01	TRIP SOLENOID VALVE INTERFACE MODULE				
NPCL01	COMMON TRANSMISSION MODULE				
MC	MASTER CONTROLLER				

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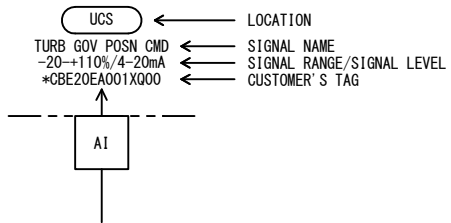
		
		
		

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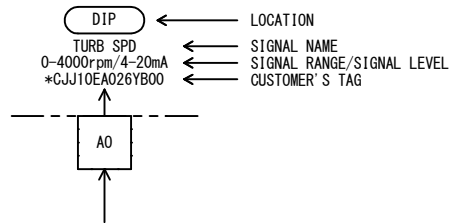
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	ABBREVIATION 7K2K1689 -009
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SH

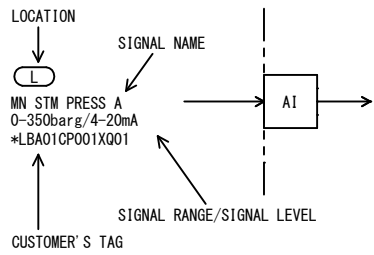
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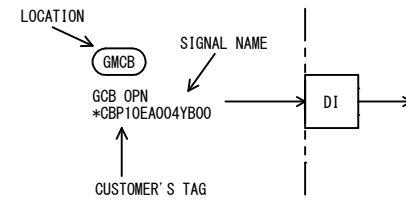
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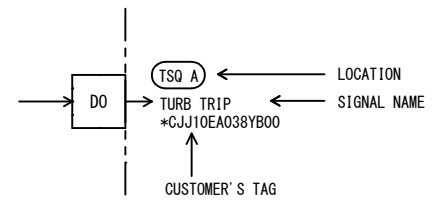
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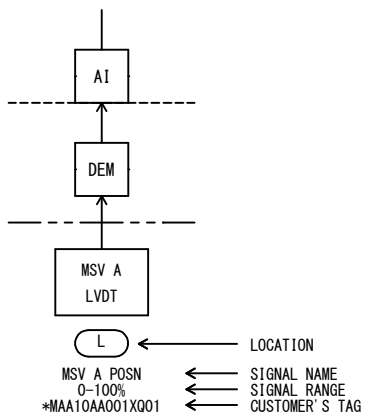
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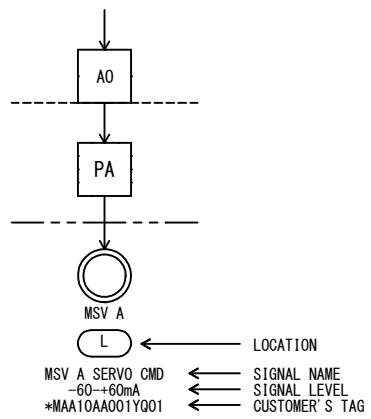
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<ANALOG INPUT3>



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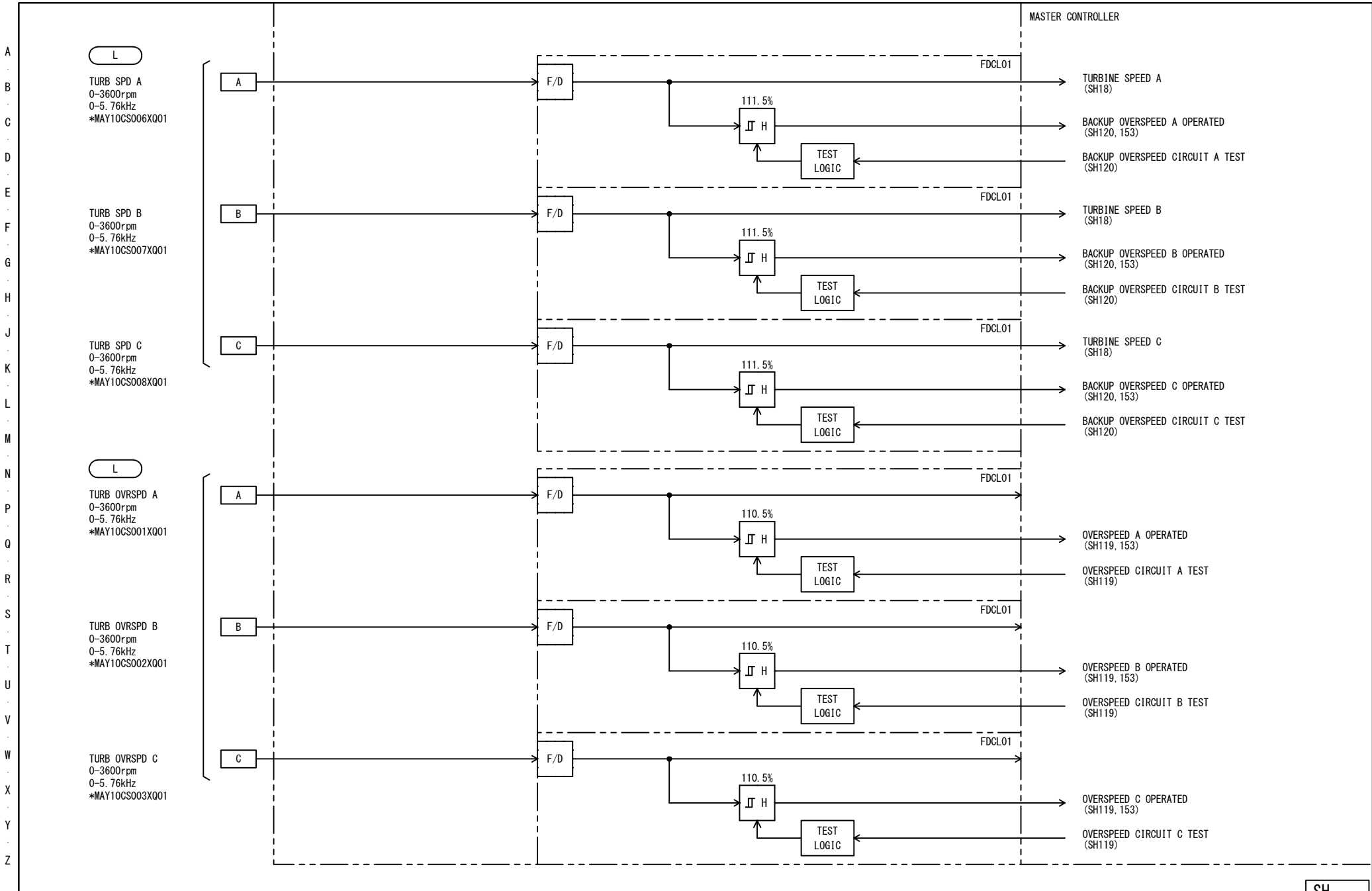


(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F N. Y Jun. 25. 21	EXPLANATION OF HARDWIRED I/O POINTS 7K2K1689 -011
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SH



(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

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T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
---/ R. F.
N. Y
Jun. 25. 21

TURBINE SPEED INPUT

7K2K1689 -017

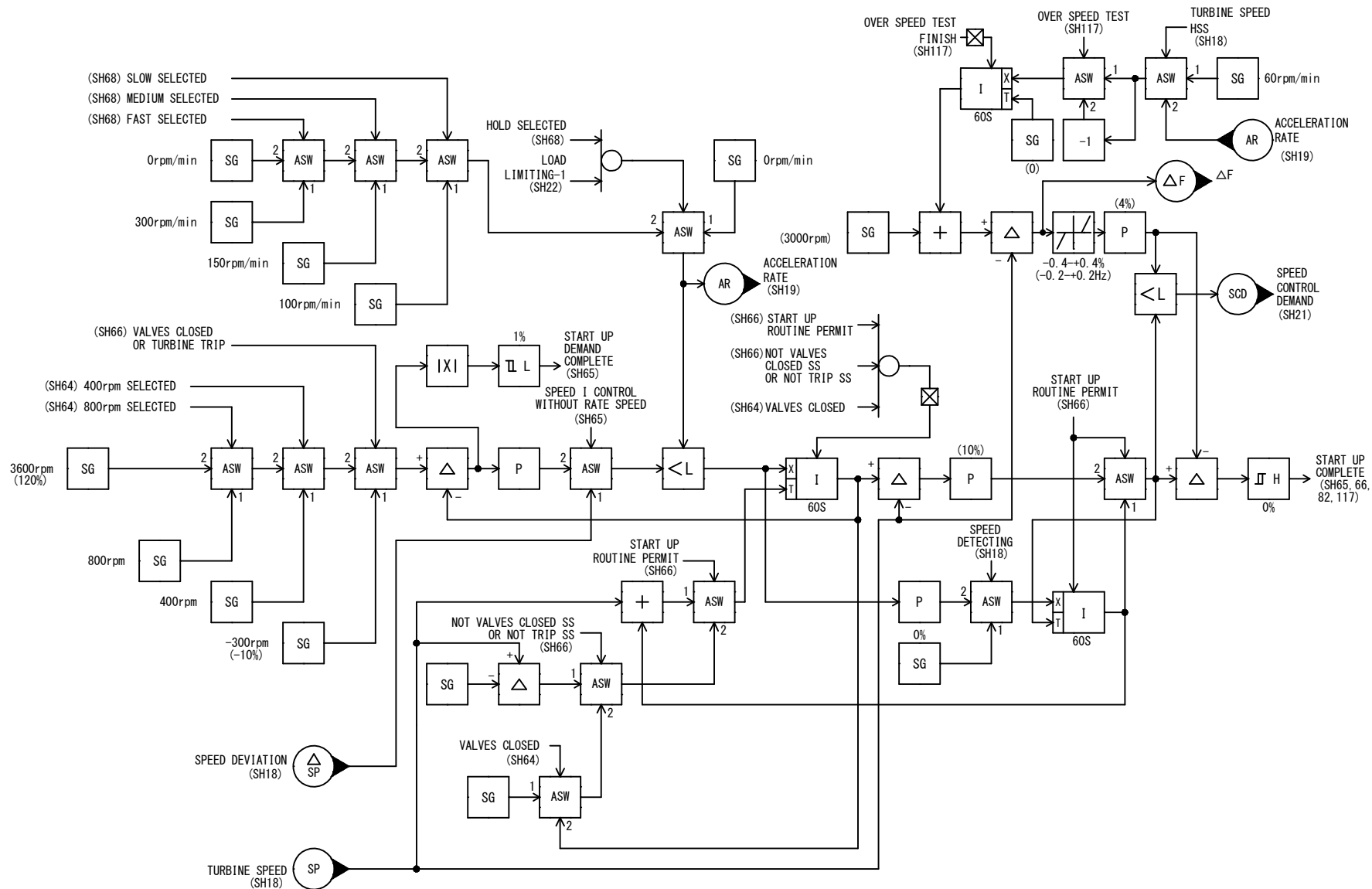
SH



(*) NOTE
*:10 (UNIT1)
:20 (UNIT2)

7K2K1689 -018

MASTER CONTROLLER



REV. 2

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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F. N. Y Jun. 25. 21	SPEED REFERENCE (2) 7K2K1689 -019
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7K2K1689 -021



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MASTER CONTROLLER

(L)
MN STM PRESS A
0-40MPa/4-20mA
*LBA51CP001XQ01

(L)
MN STM PRESS B
0-40MPa/4-20mA
*LBA52CP001XQ01

MSP A
SIGNAL FAILURE
(SH73)

MSP B
SIGNAL FAILURE
(SH73)

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(0)

MSP
(SH21, 22, 26, 43, 133, 134, 136)

(UCS)
MS PRS A
0-40MPa/4-20mA
*CJJ10EA002YQ00

(UCS)
MS PRS B
0-40MPa/4-20mA
*CJJ10EA003YQ00

(OPS) (DCS)
MAIN STEAM PRESSURE

(TSI)
MN STM PRESS
0-40MPa/4-20mA
*CJJ10EA024YQ00

SH

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○	REV. 2

(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

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Jun. 25. 21

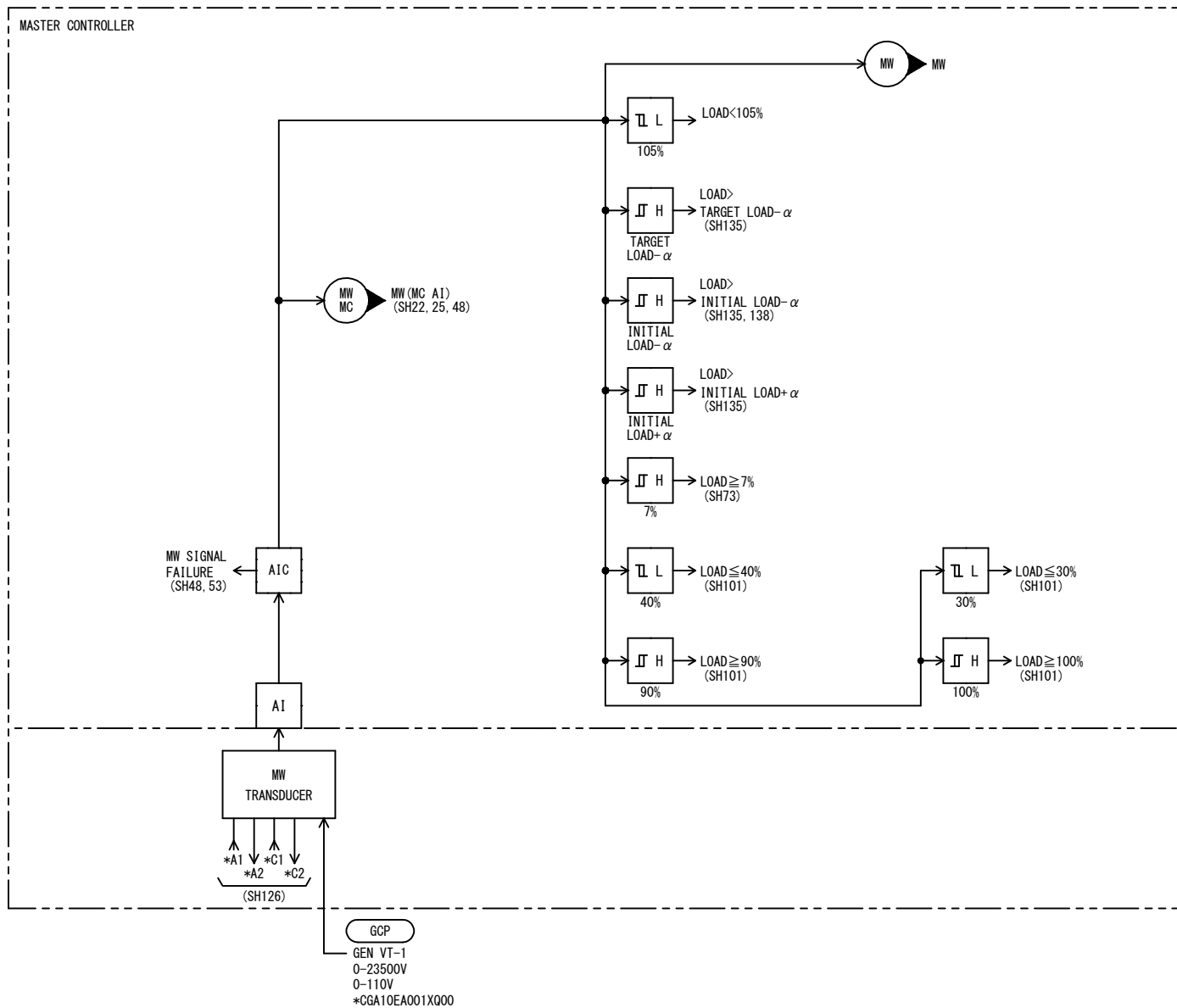
設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

MN STEAM PRESSURE

7K2K1689 -023

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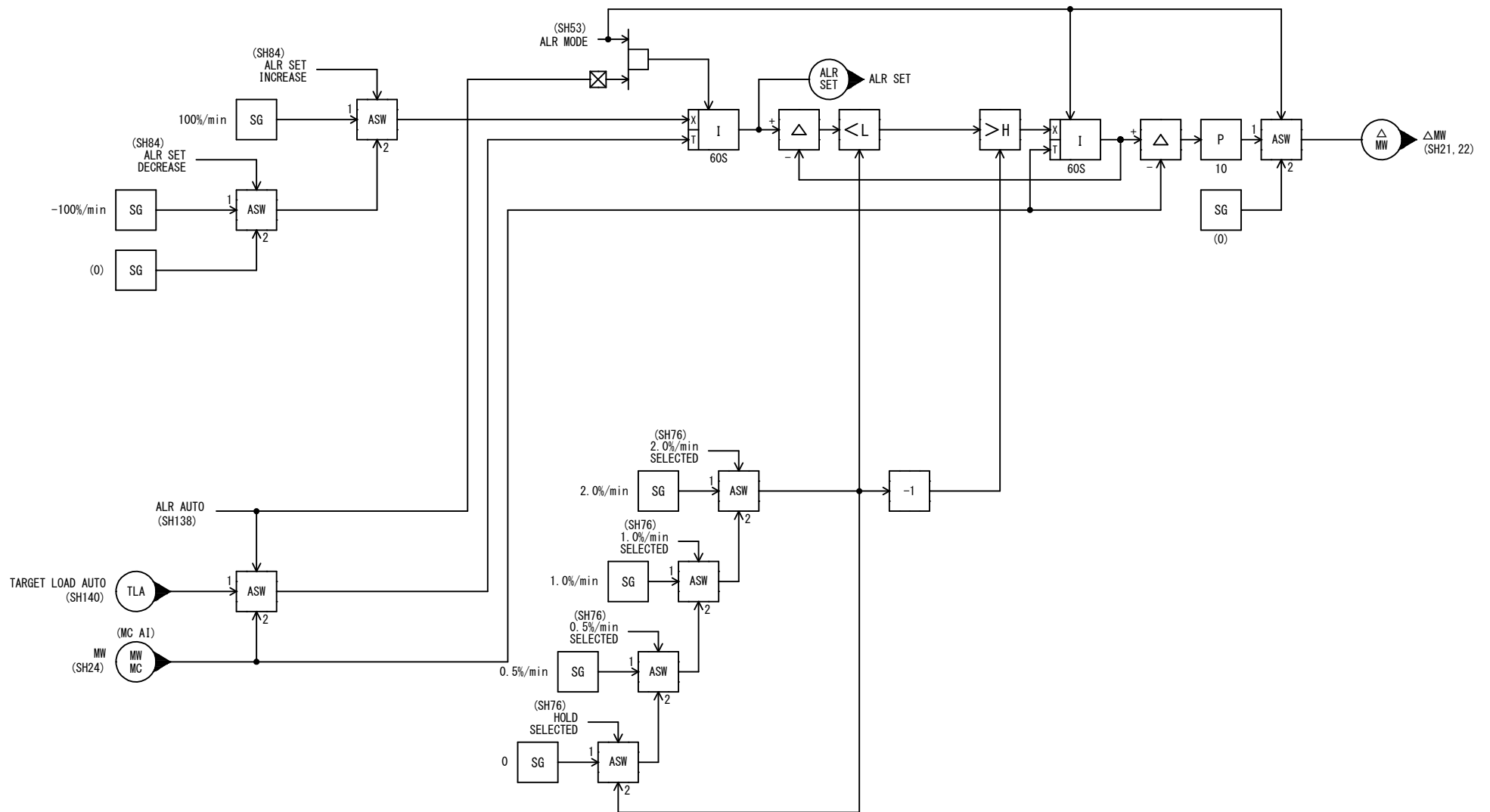
REV. 2

(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

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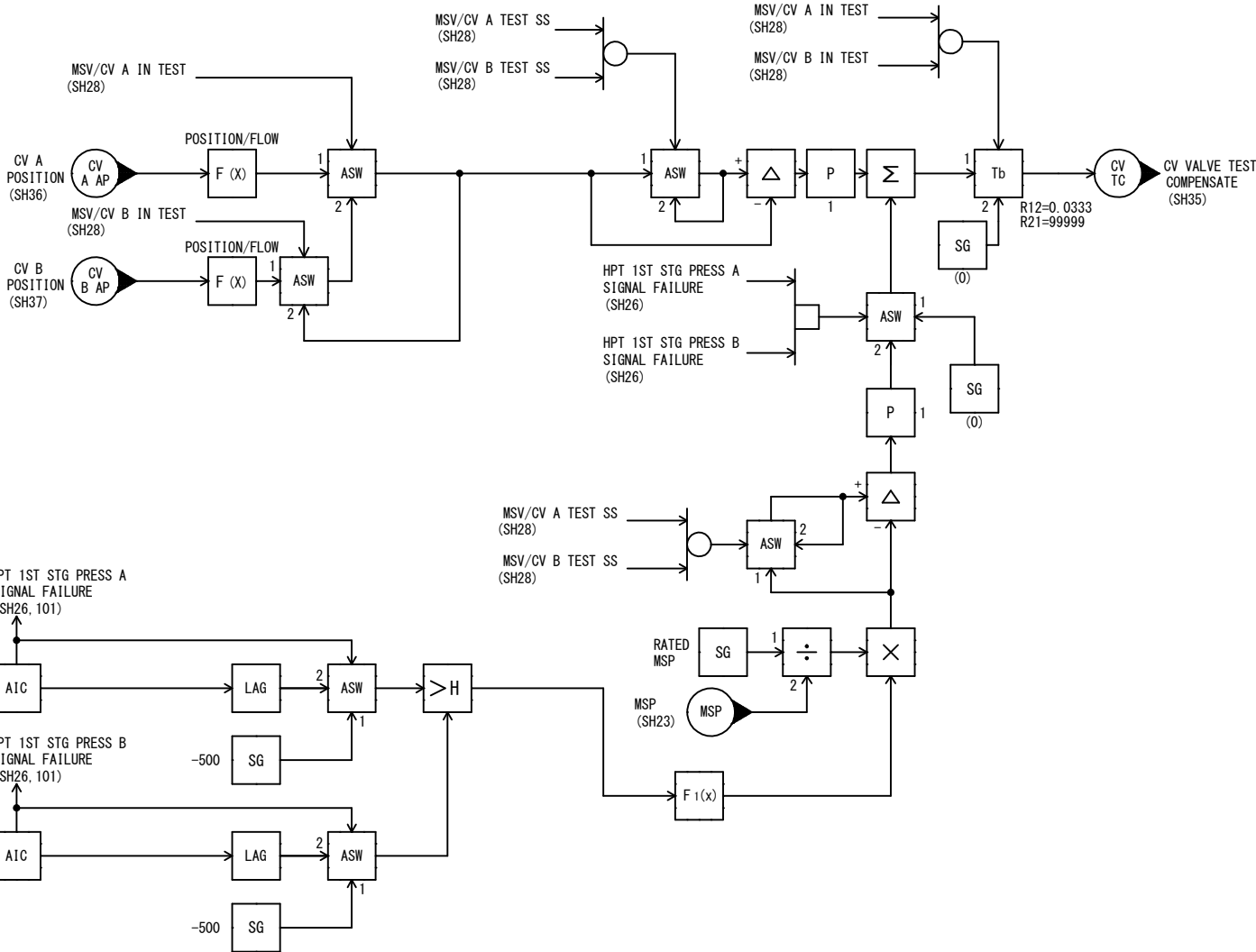
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F. N. Y. Jun. 25. 21	LOAD DETECT 7K2K1689 -024
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SH



7K2K1689 -025

MASTER CONTROLLER



(L)

HPT 1ST STAGE SHELL STM PRESS A
0-40MP_{ag} /4-20mA
*MAA10CP001XQ01

(L)

HPT 1ST STAGE SHELL STM PRESS B
0-40MP_{ag} /4-20mA
*MAA10CP003XQ01

SH

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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	CV TEST COMPENSATE 7K2K1689 -026
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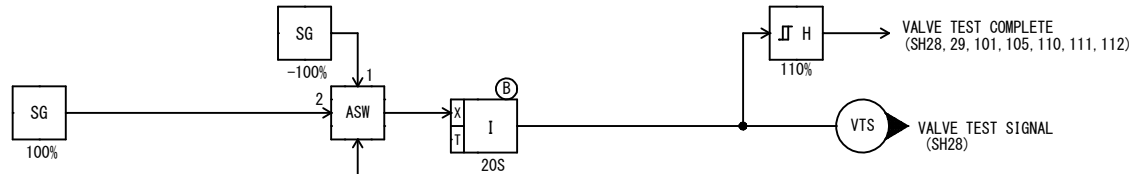
MASTER CONTROLLER

CV A TEST CLOSE
(SH105)

CV B TEST CLOSE
(SH105)

ICV A TEST CLOSE
(SH110)

ICV B TEST CLOSE
(SH110)

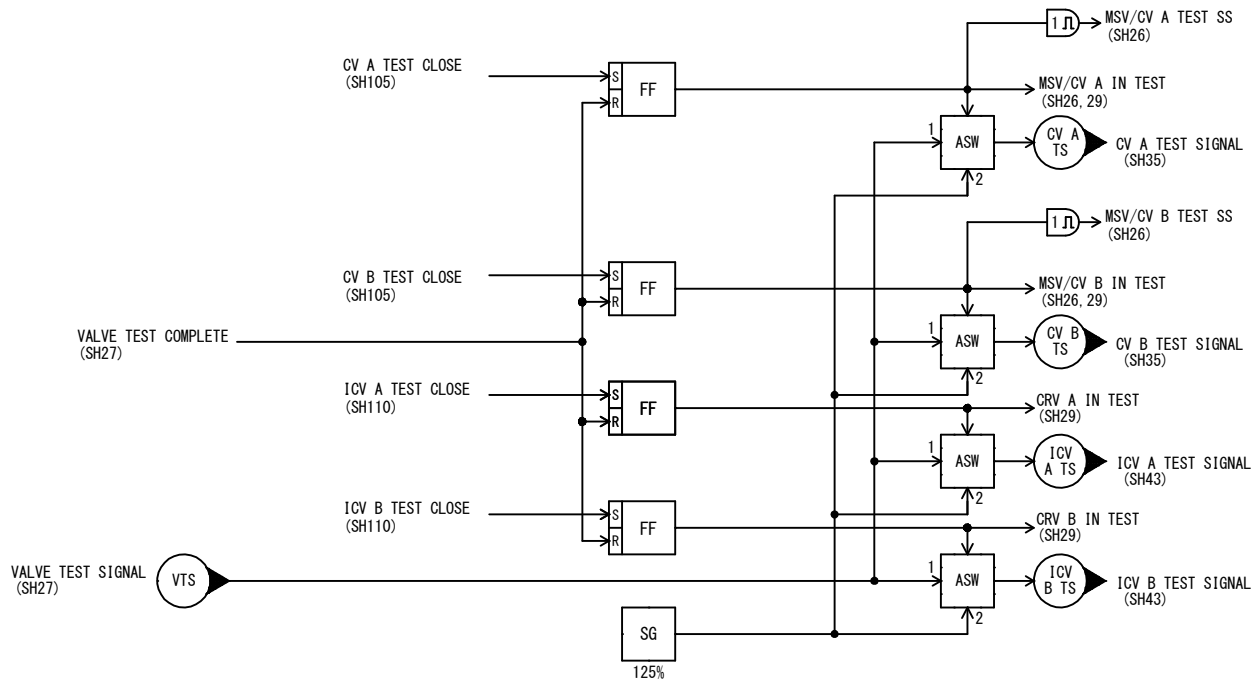


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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	VALVE TEST DEMAND (1) 7K2K1689 -027
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MASTER CONTROLLER



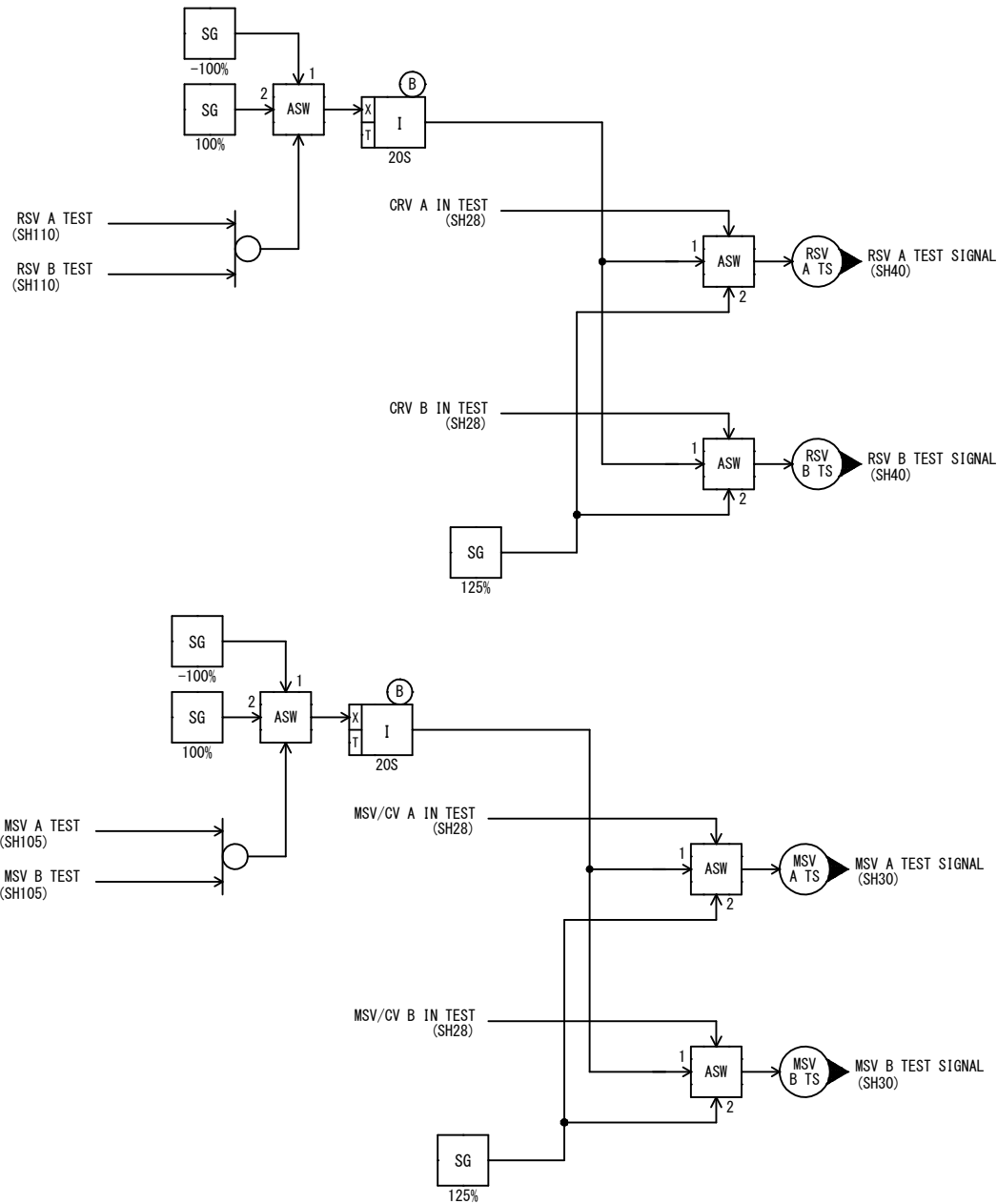
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○	REV. 2

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	VALVE TEST DEMAND (2) 7K2K1689 -028
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MASTER CONTROLLER

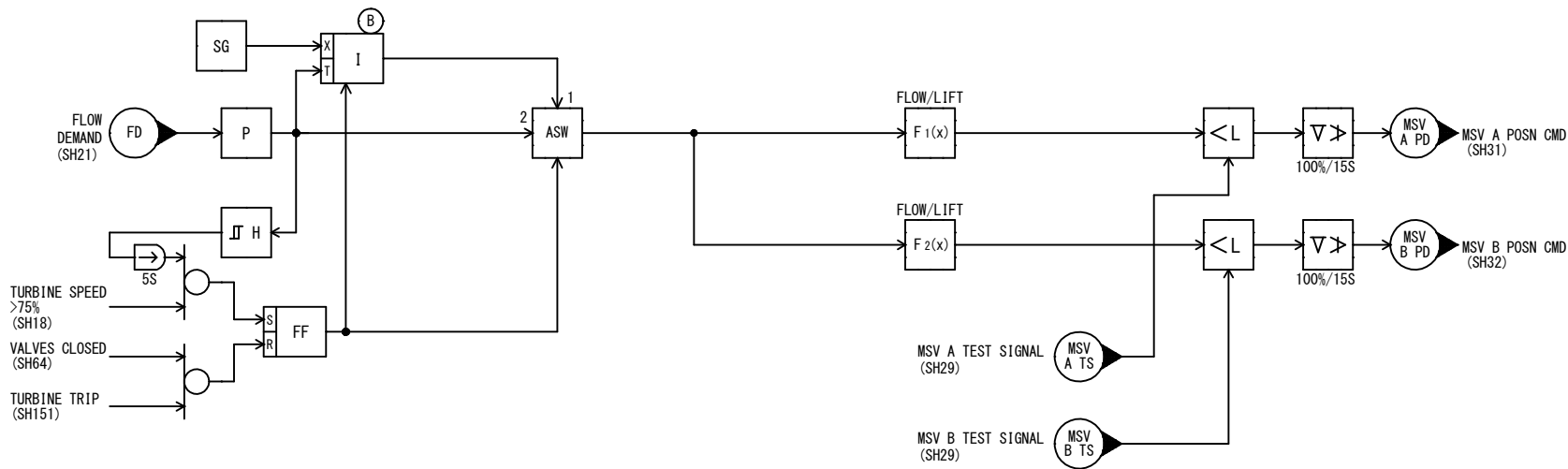


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	VALVE TEST DEMAND (3) 7K2K1689 -029
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MASTER CONTROLLER



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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

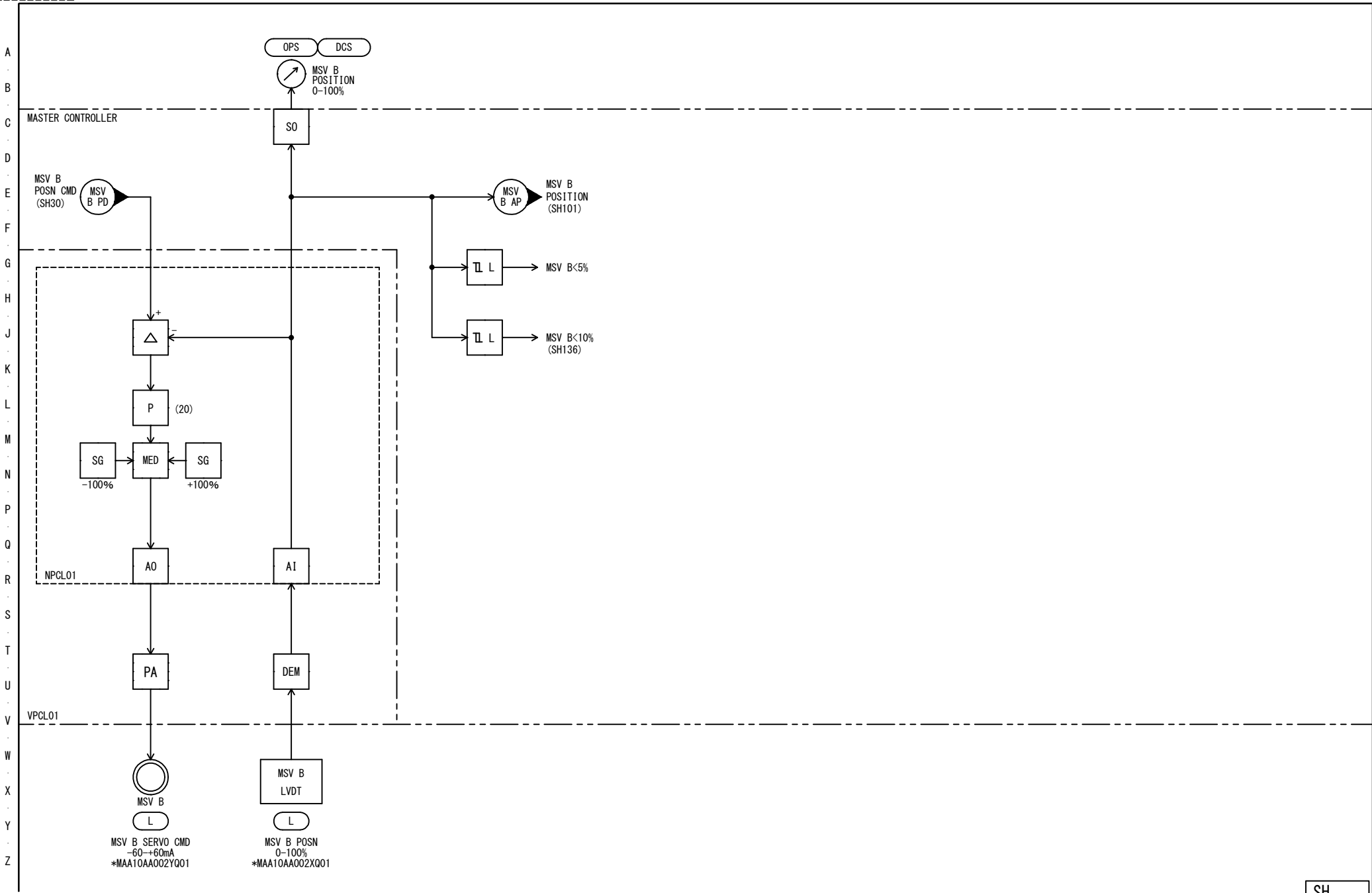
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	MSV CONTROL 7K2K1689 -030
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(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

調査 CHECKED BY T. S./K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	MSV A POSITION CONTROL 7K2K1689 -031
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(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

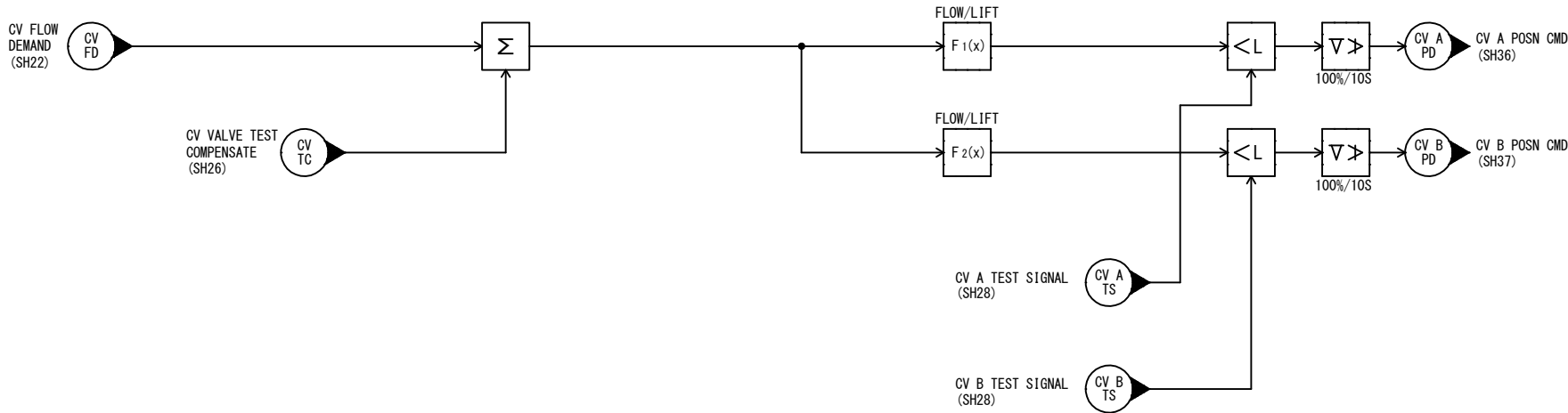
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	MSV B POSITION CONTROL 7K2K1689 -032
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MASTER CONTROLLER



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○	REV. 2

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

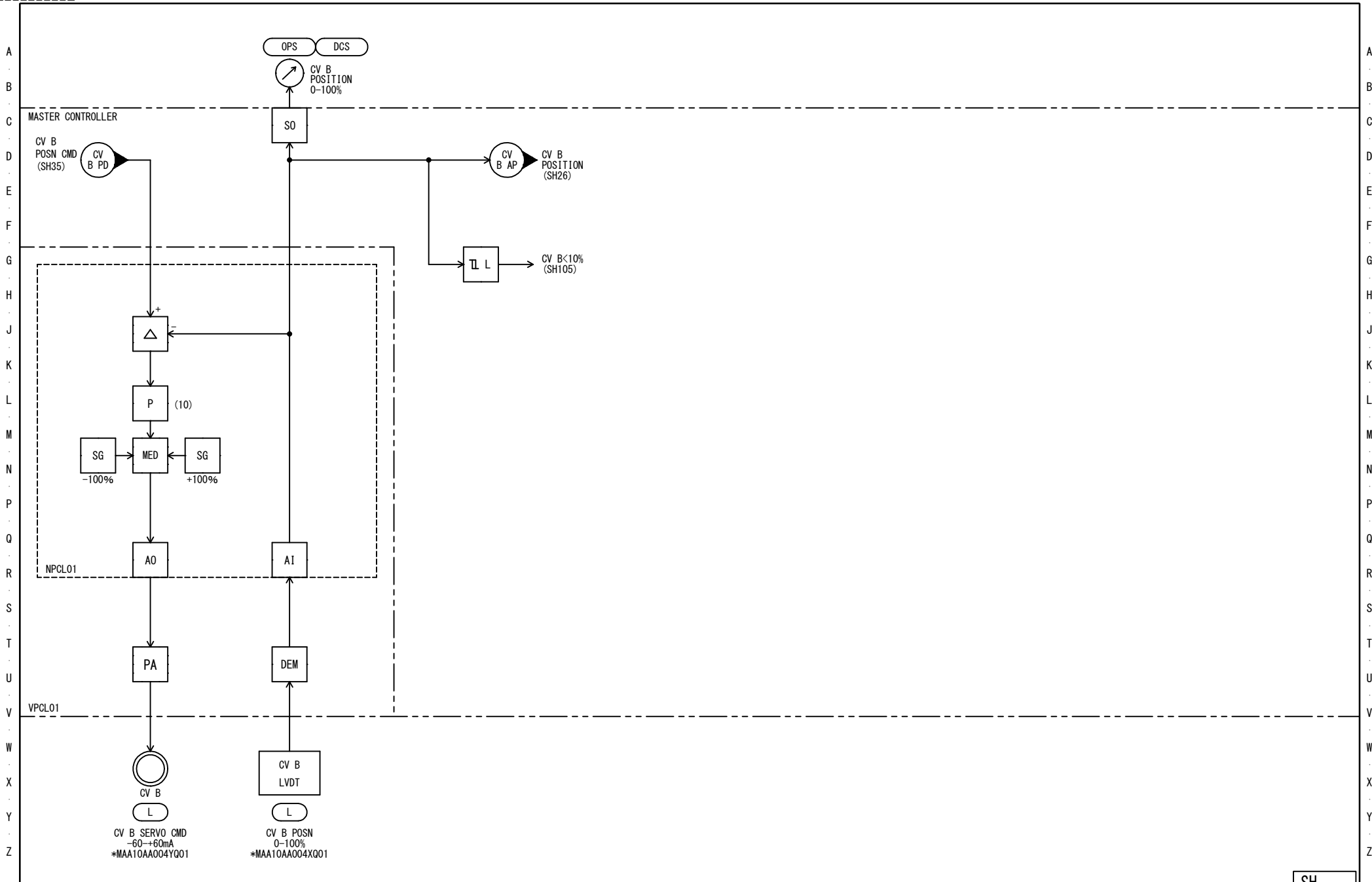
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	CV CONTROL 7K2K1689 -035
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(*) NOTE
*:10 (UNIT1)
:20 (UNIT2)

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	CV A POSITION CONTROL 7K2K1689 -036
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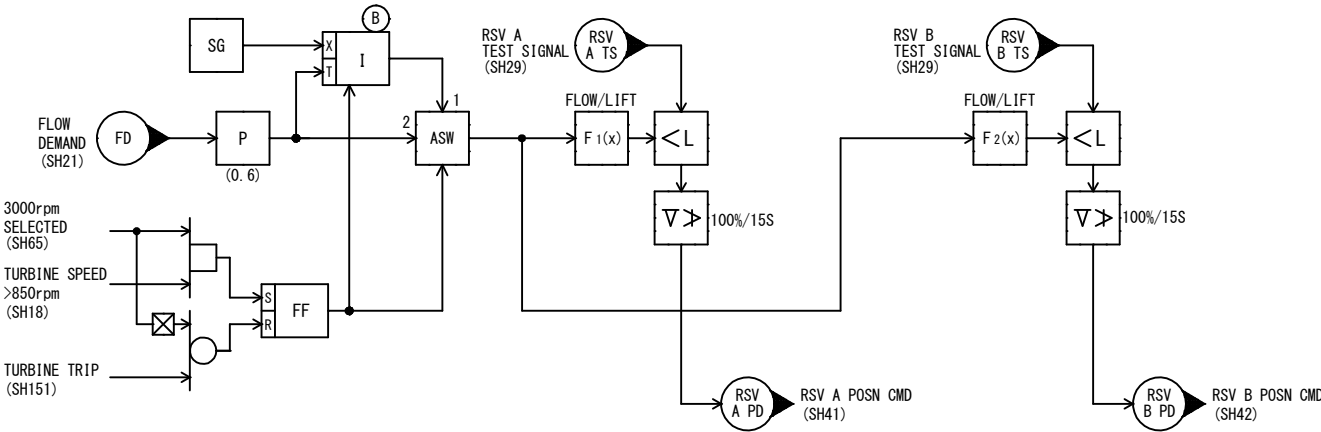


(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F N. Y Jun. 25. 21	CV B POSITION CONTROL 7K2K1689 -037
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MASTER CONTROLLER

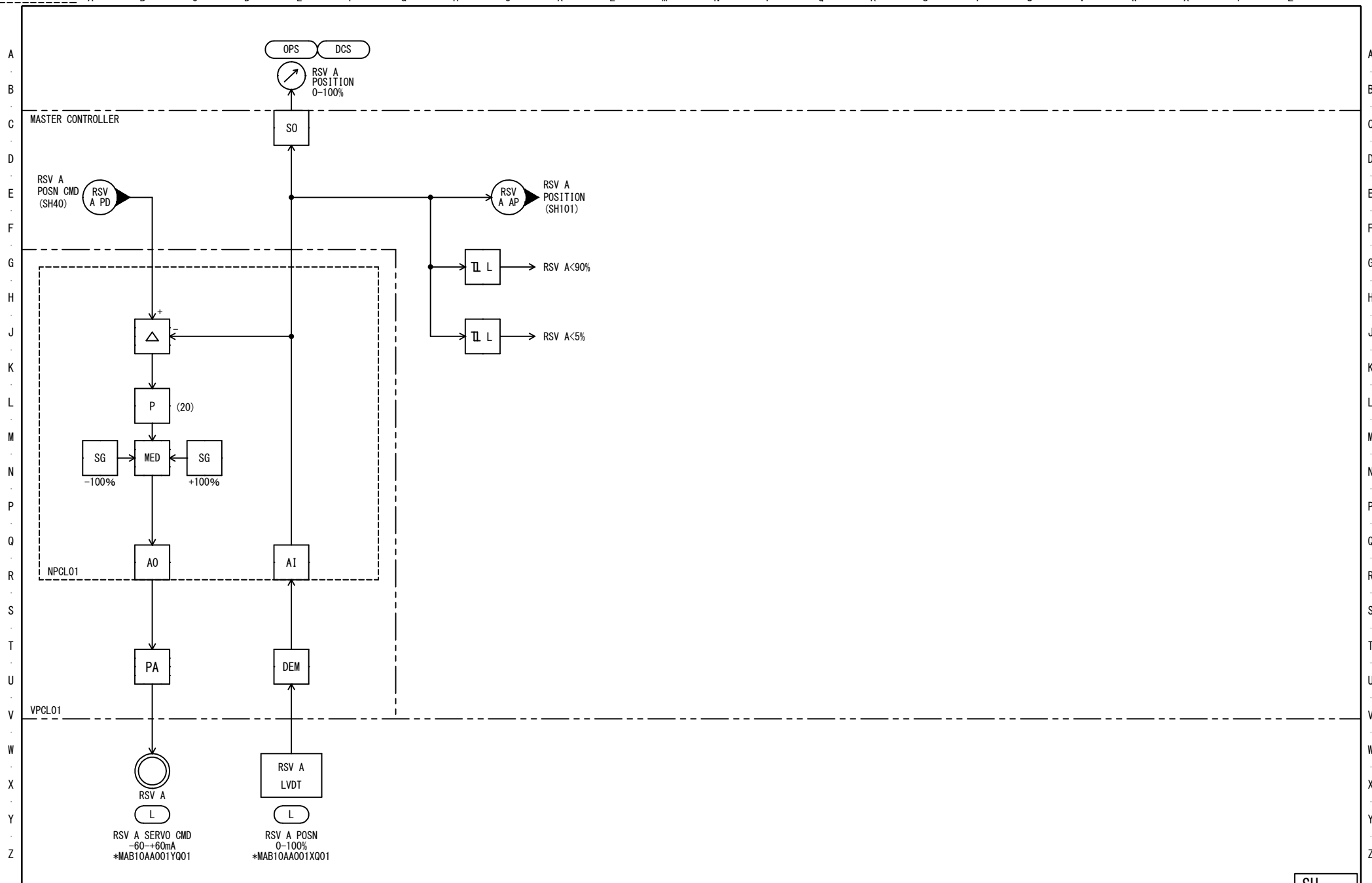


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	RSV CONTROL 7K2K1689 -040
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(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

RSV(A) POSITION CONTROL

7K2K1689 -041

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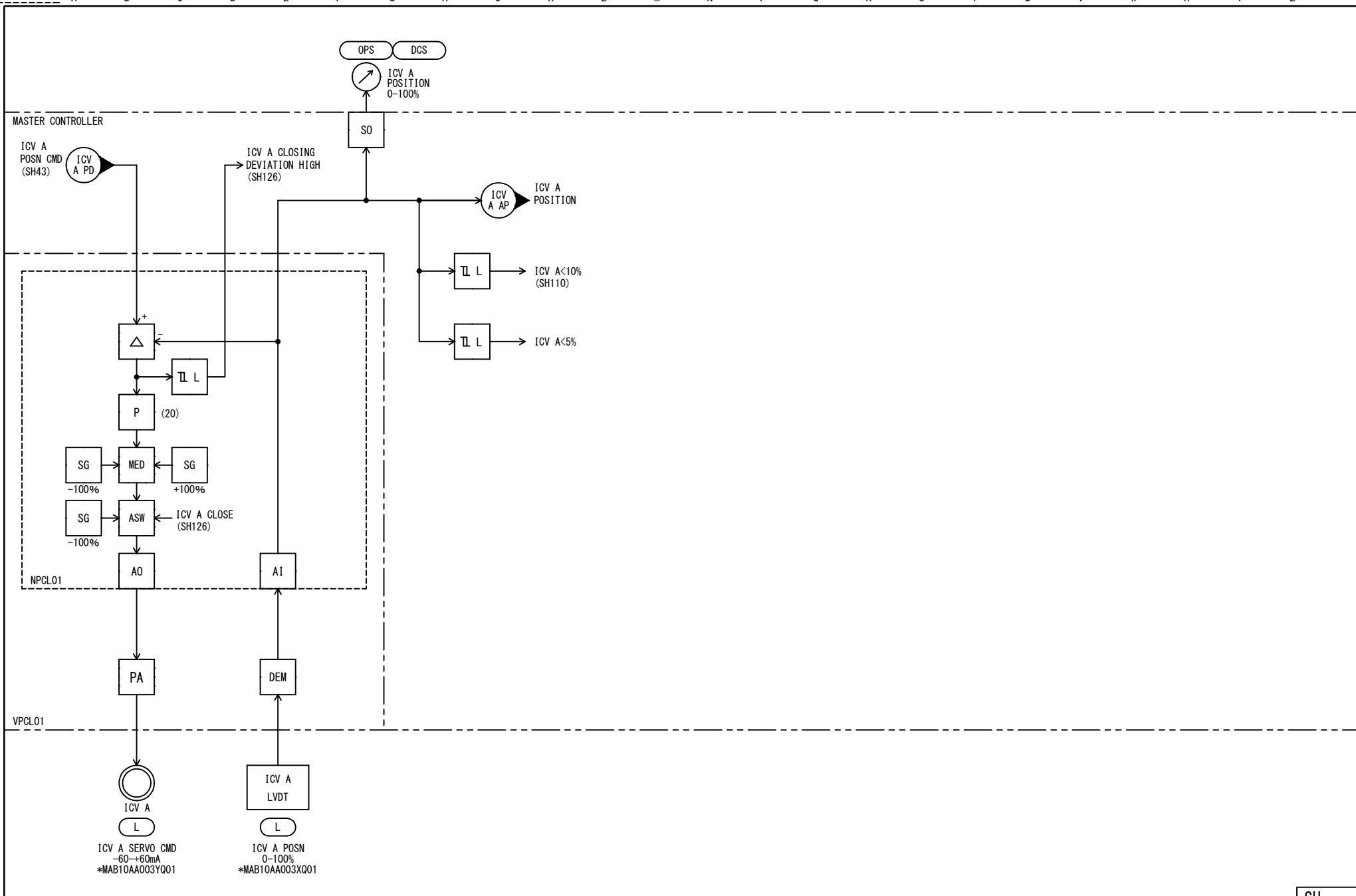
(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

7K2K1689 -042



(*) NOTE
*:10 (UNIT1)
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7K2K1689 -043

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(*)NOTE
*:10 (UNIT1)
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東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

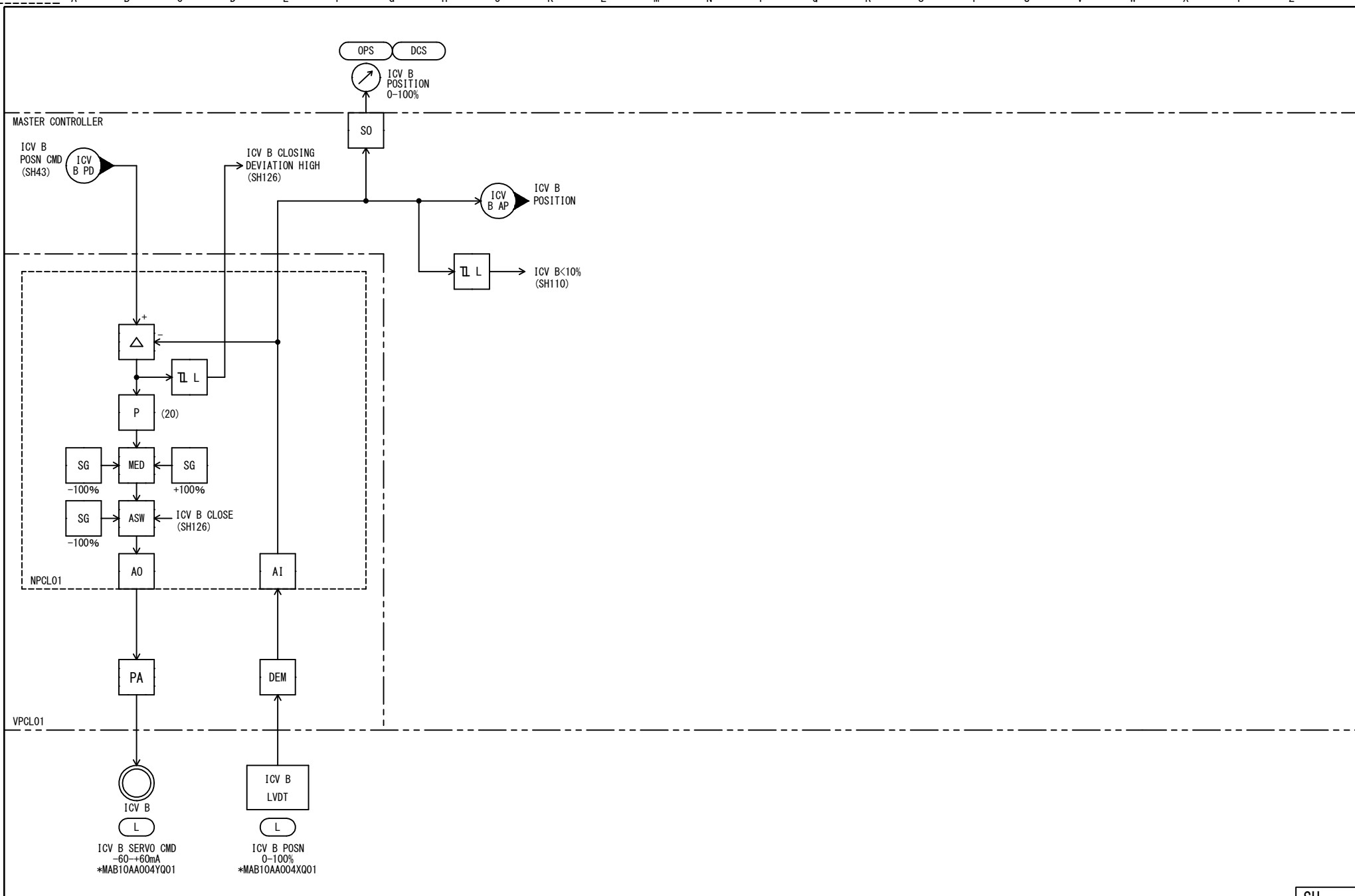
調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

ICV A POSITION CONTROL

7K2K1689 -044

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(*)NOTE
*:10 (UNIT1)
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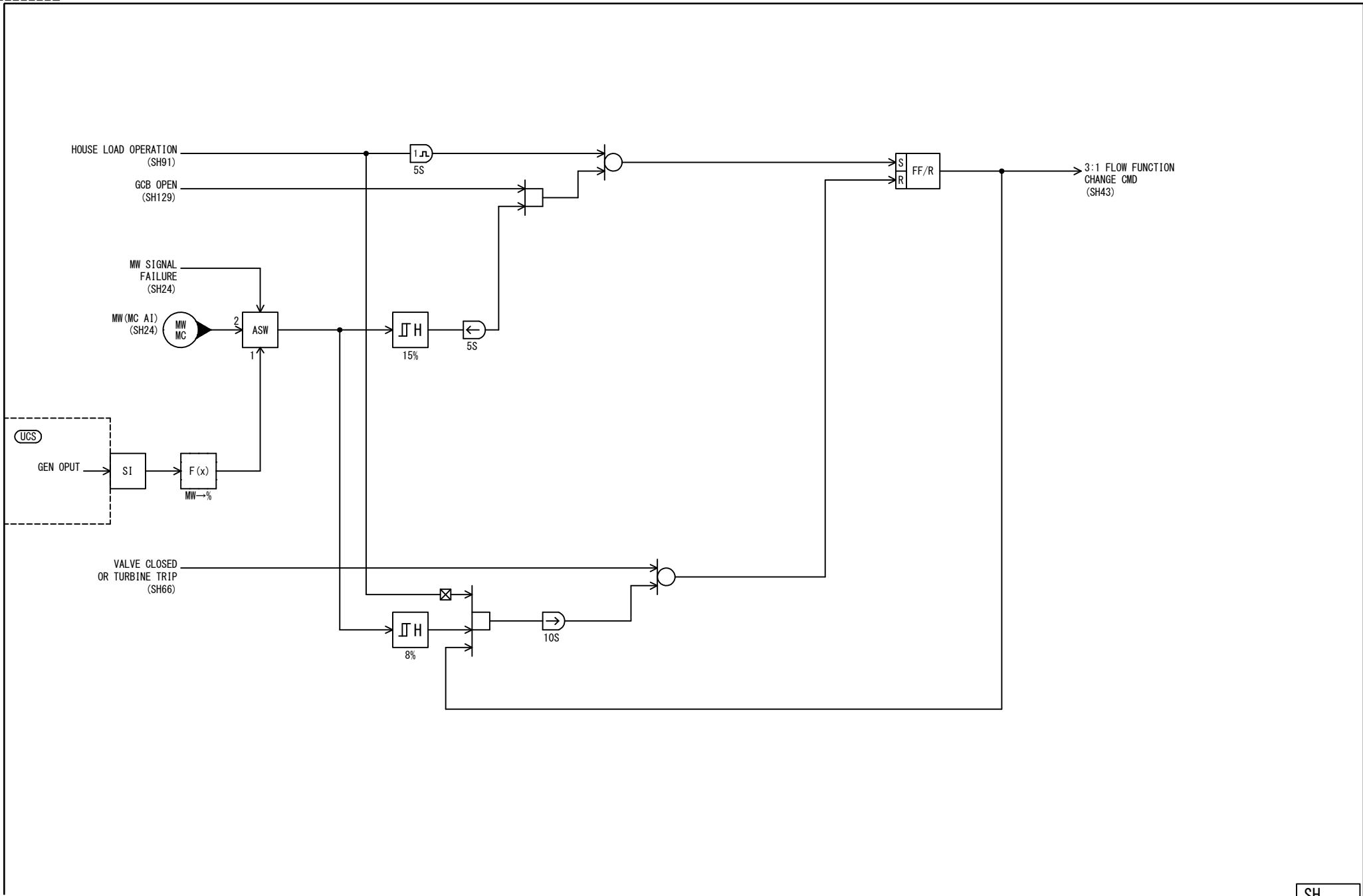
東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	ICV B POSITION CONTROL 7K2K1689 -045
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東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	3 : 1 FLOW FUNCTION CHANGE CMD (SH43) 7K2K1689 -048
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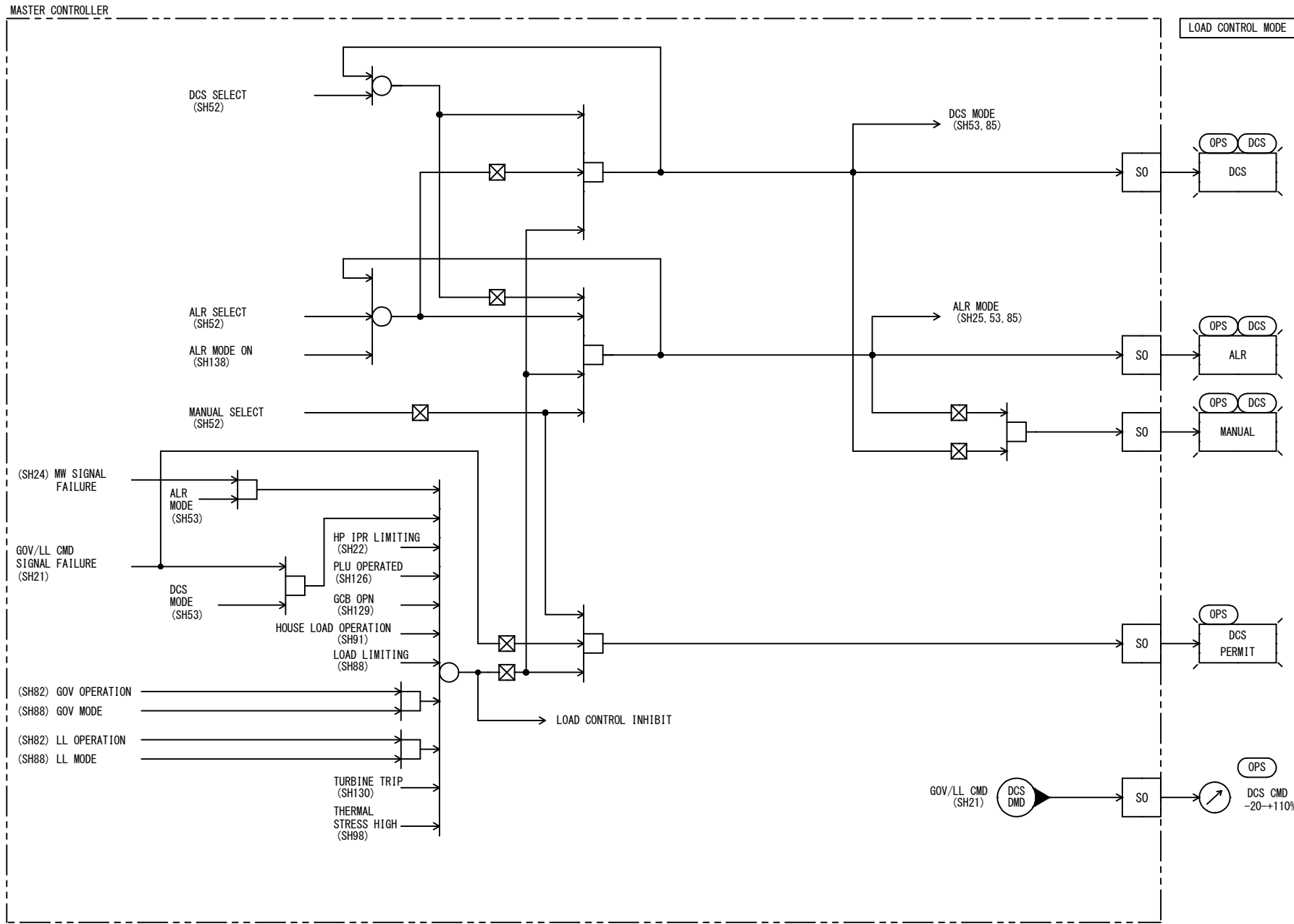
	
	REV. 2

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

設計 DESIGNED BY
——/ R. F
N. Y
Jun. 25. 21

7K2K1689 -052

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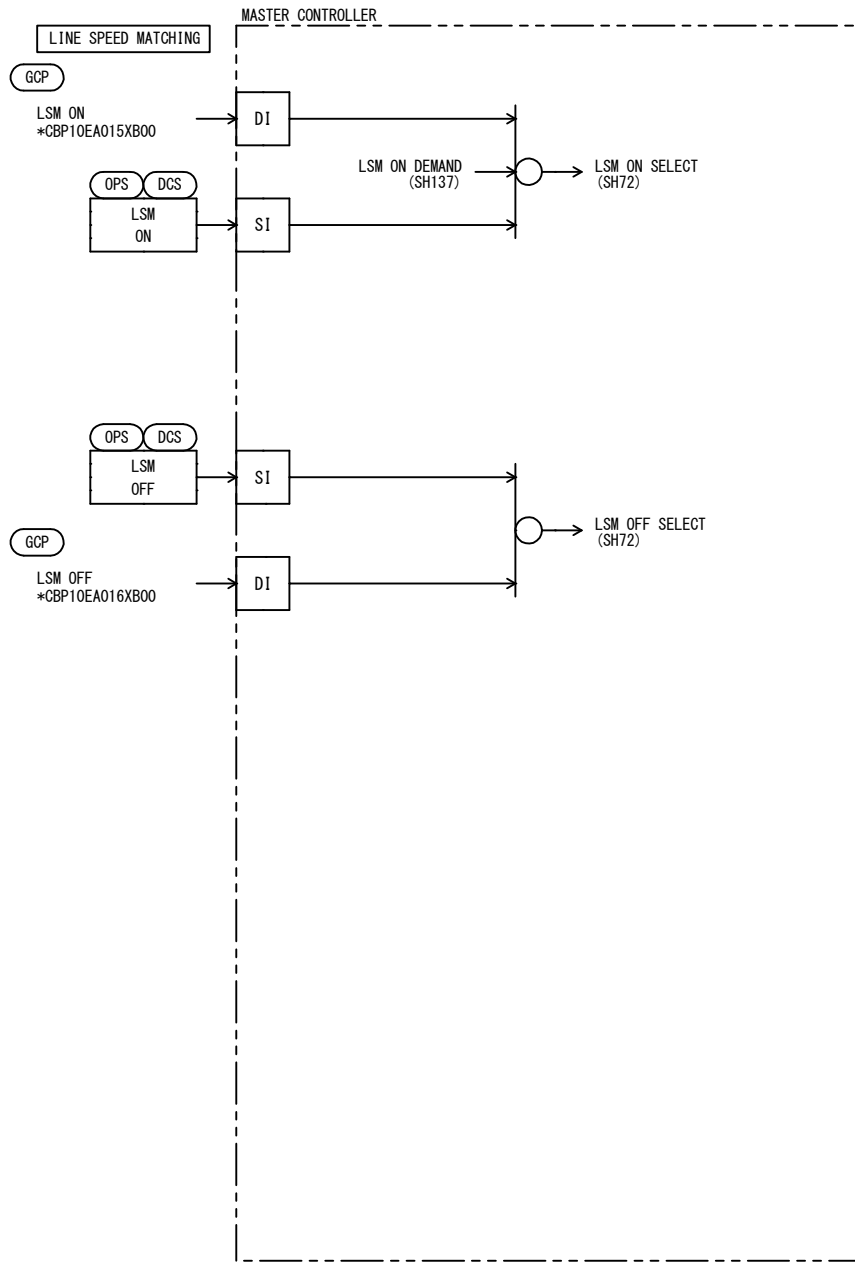
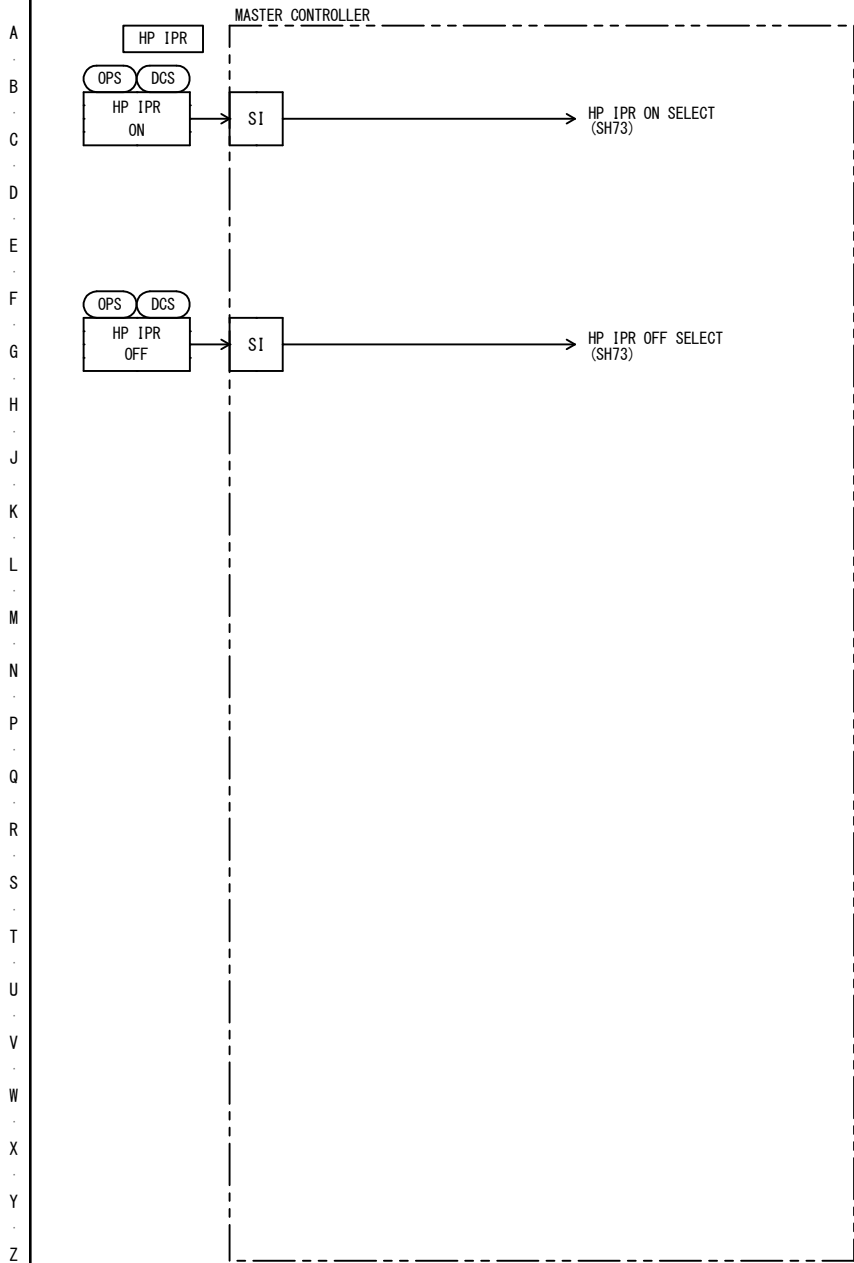


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	REV. 2

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	OPERATION MODE (2) 7K2K1689 -053
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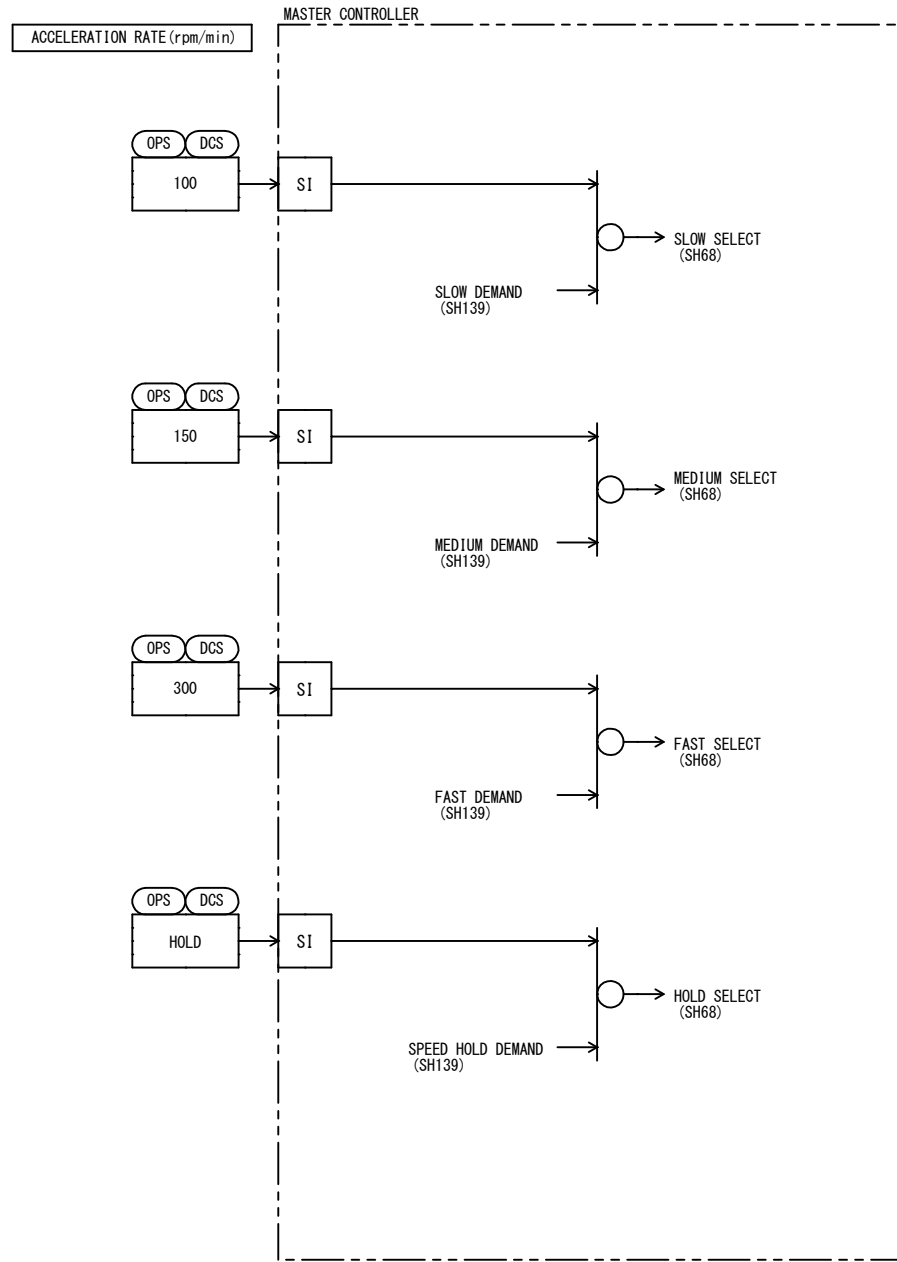
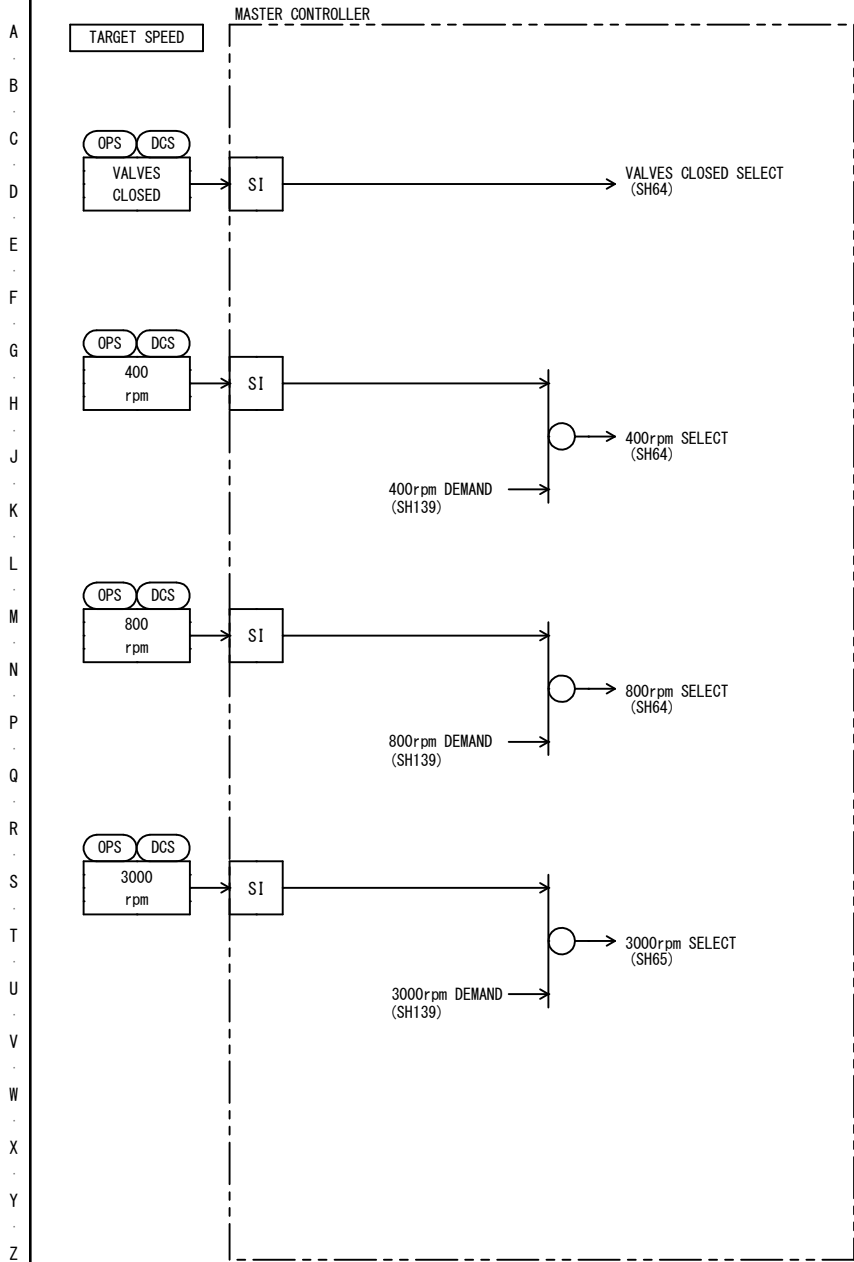
○	
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○	REV. 2

(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (1) 7K2K1689 -054
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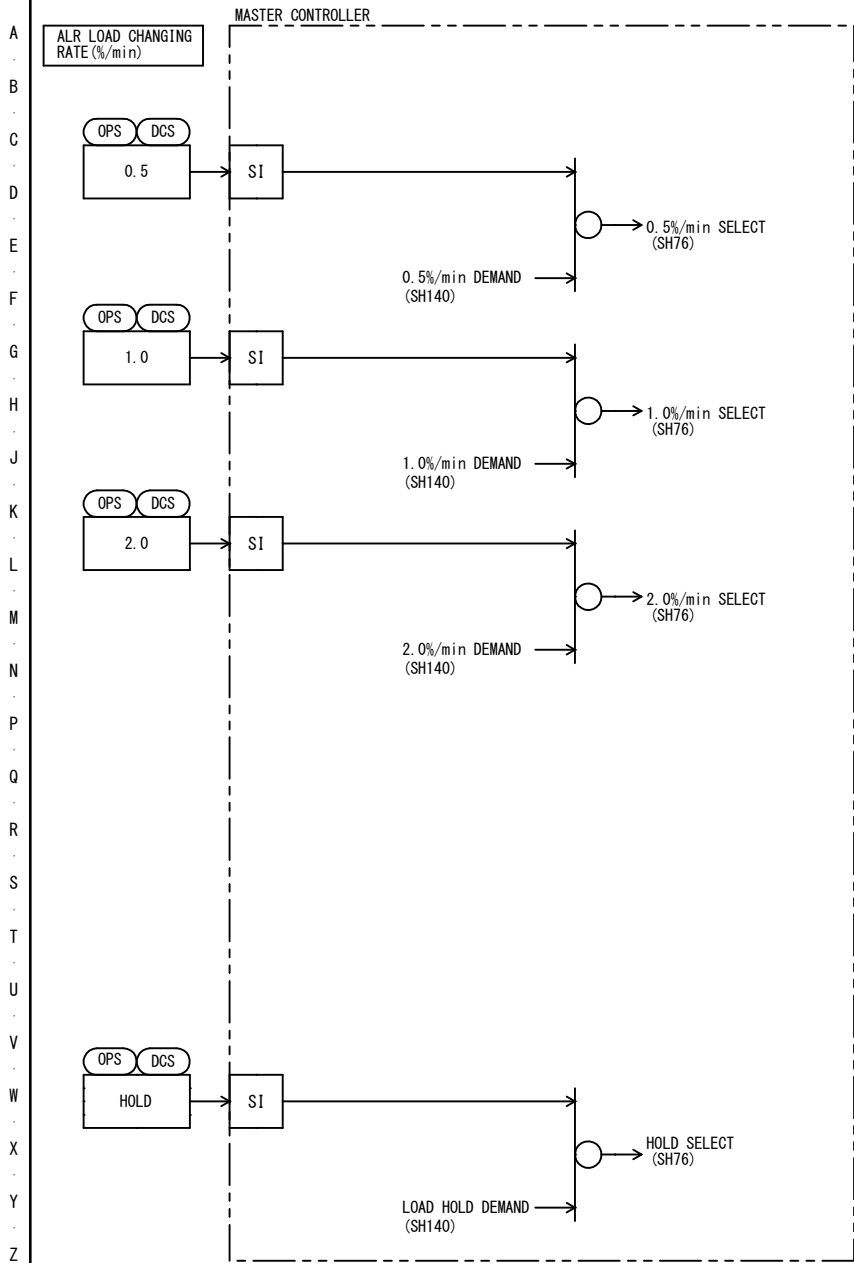


	REV. 2

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (2) 7K2K1689 -055
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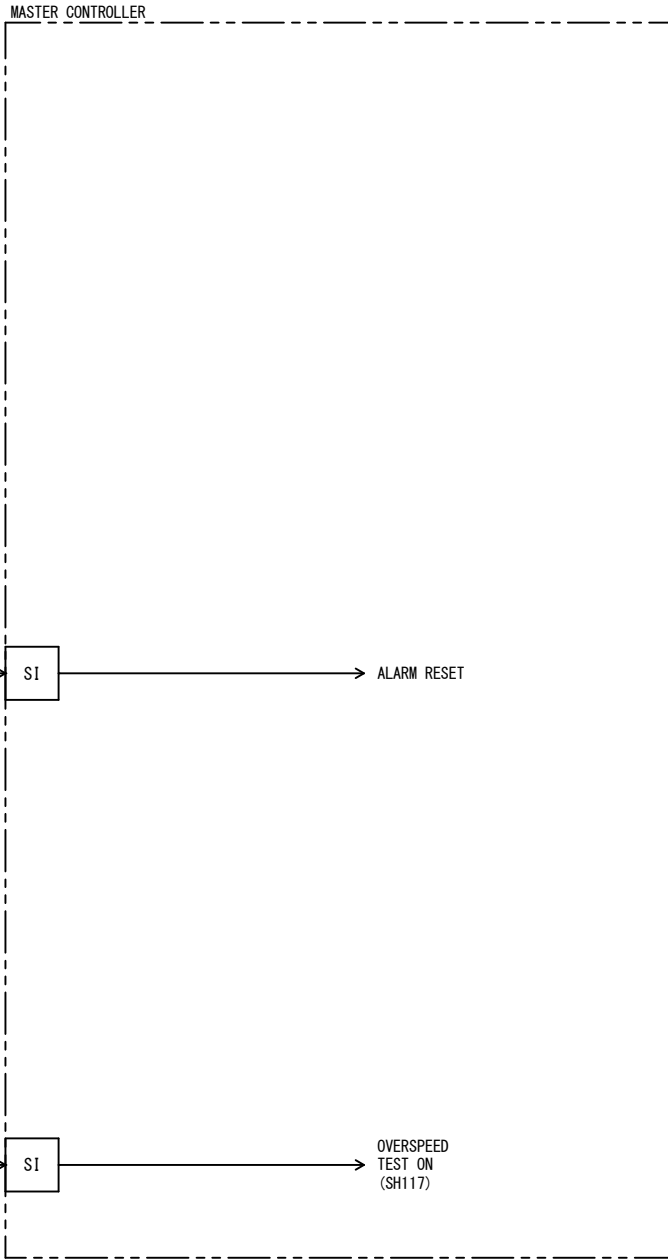
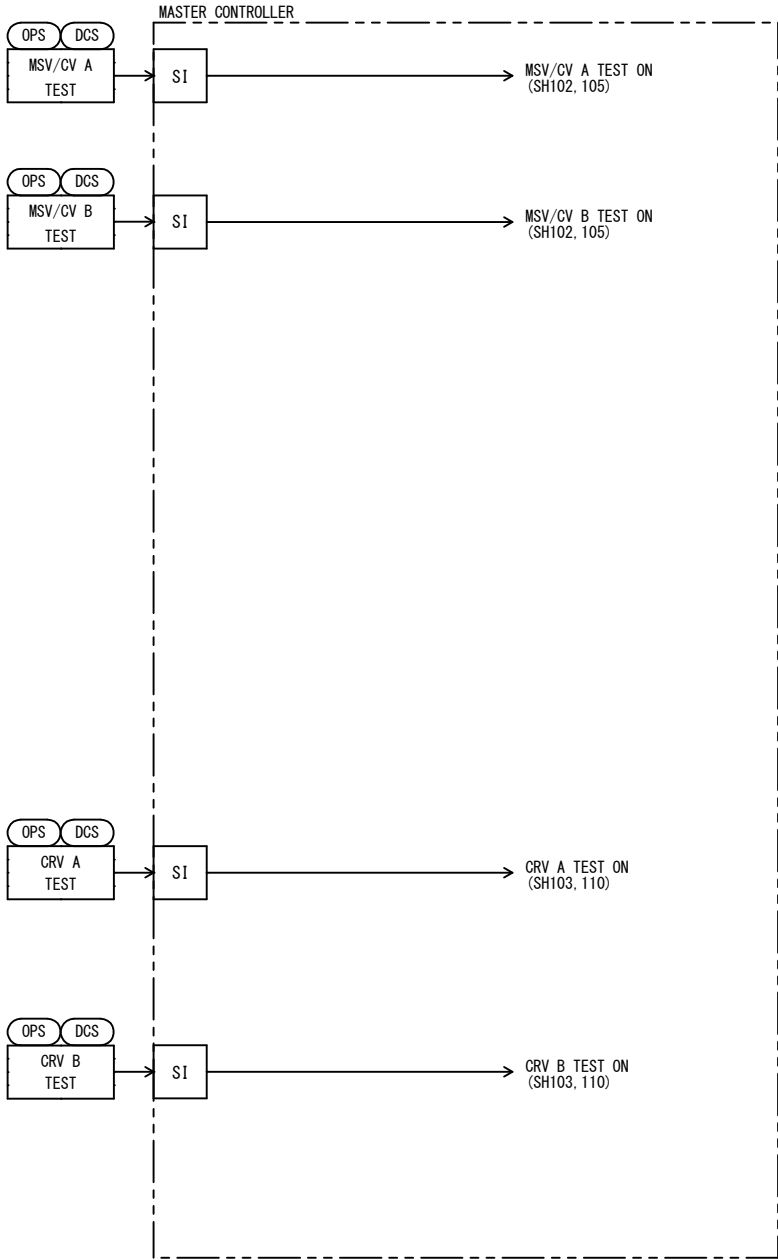


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (3) 7K2K1689 -056
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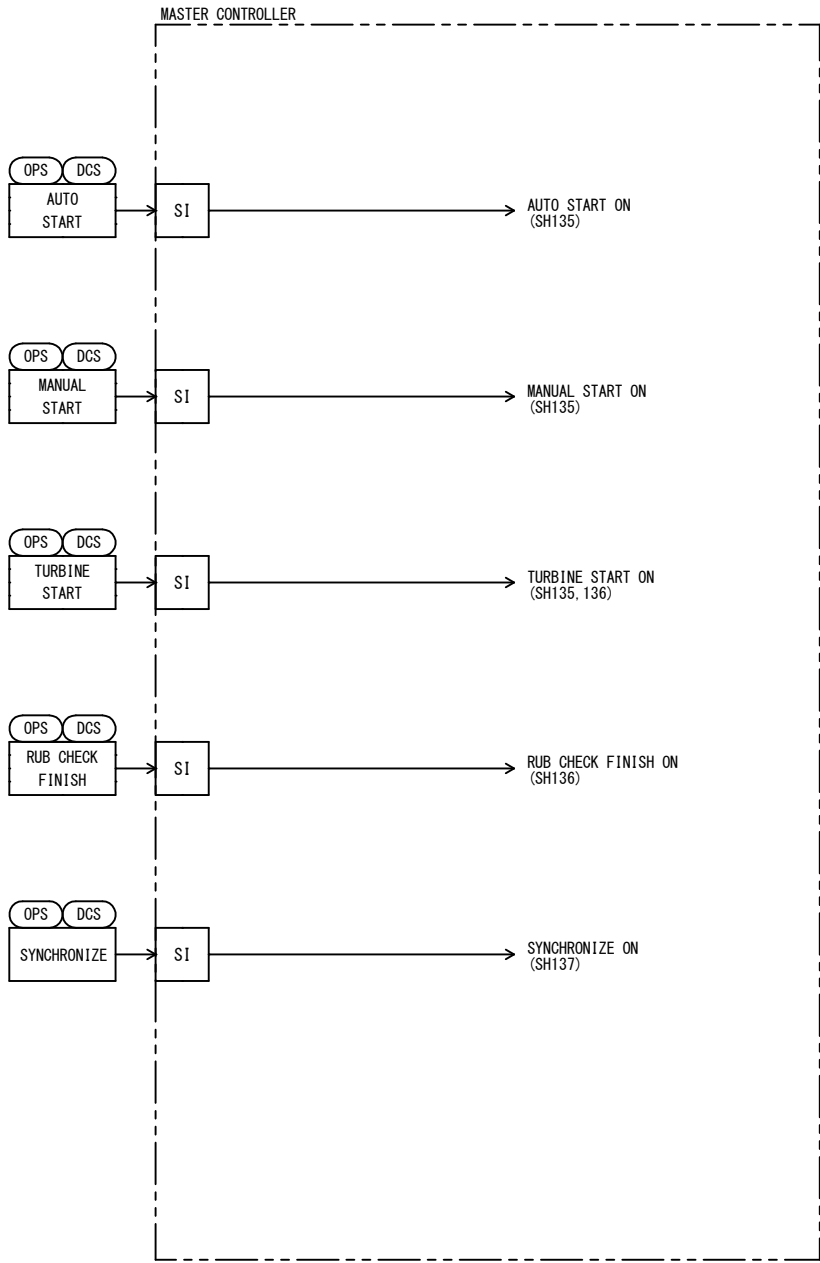
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東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (4) 7K2K1689 -057
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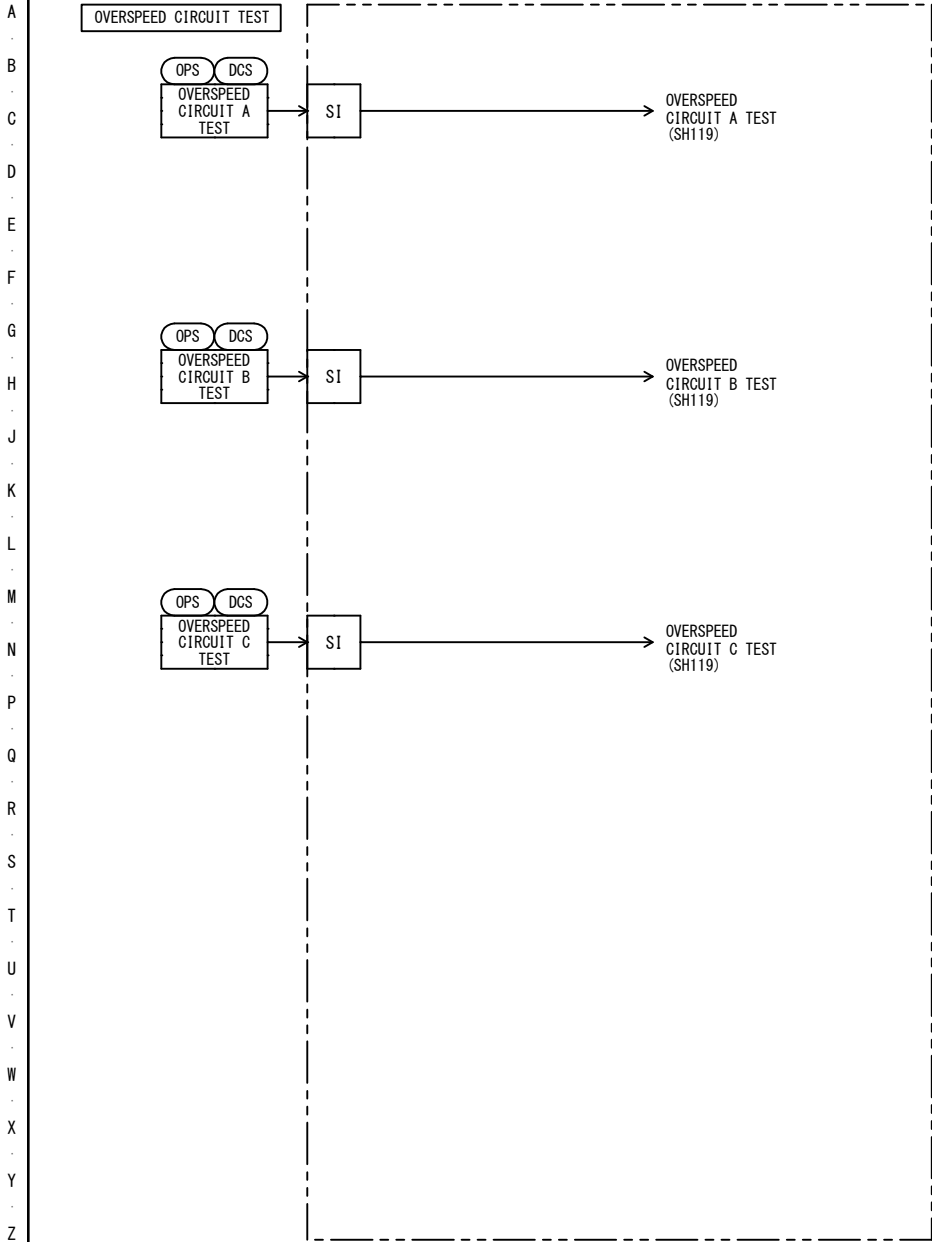


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (5) <div>7K2K1689 -058</div>
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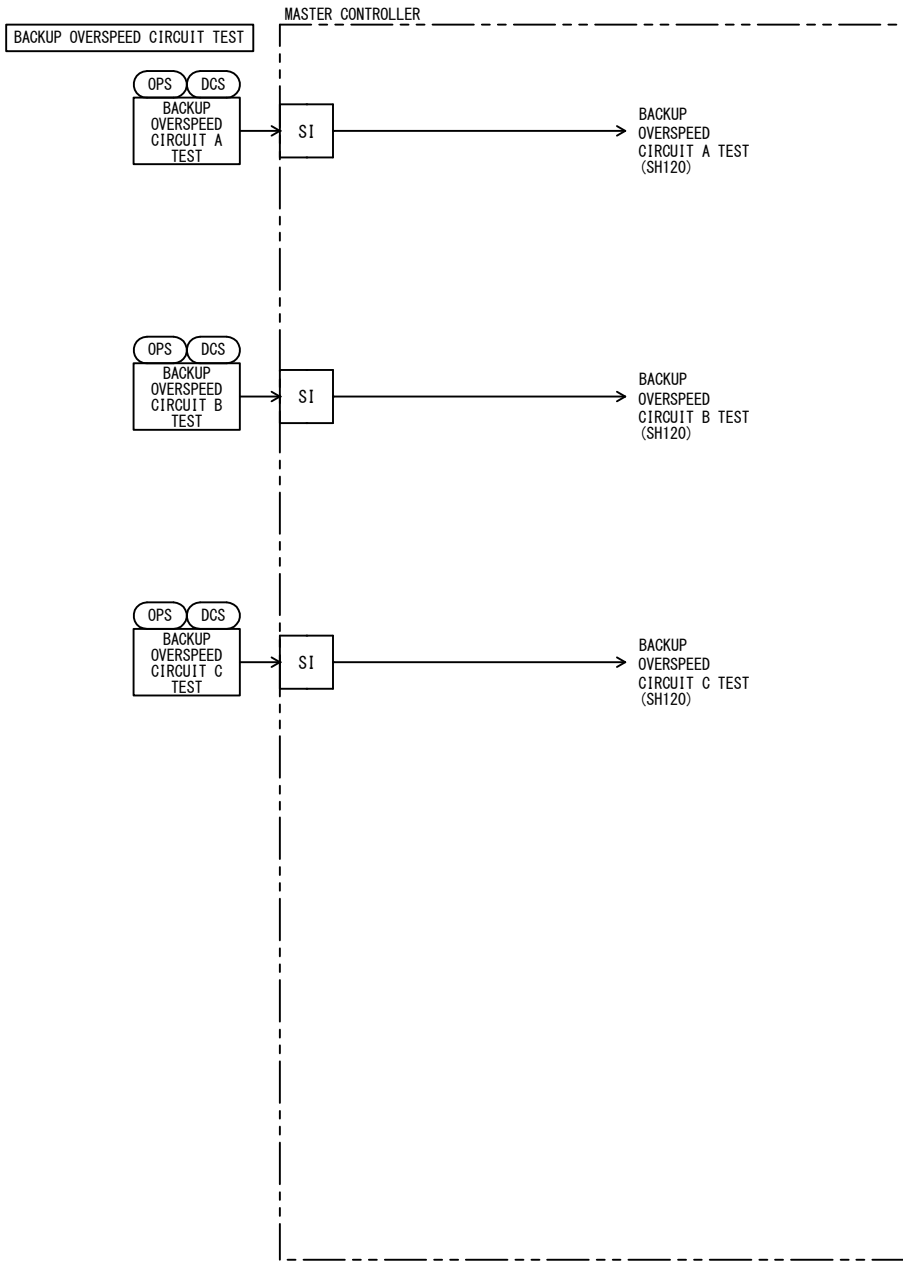
東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (6) 7K2K1689 -059
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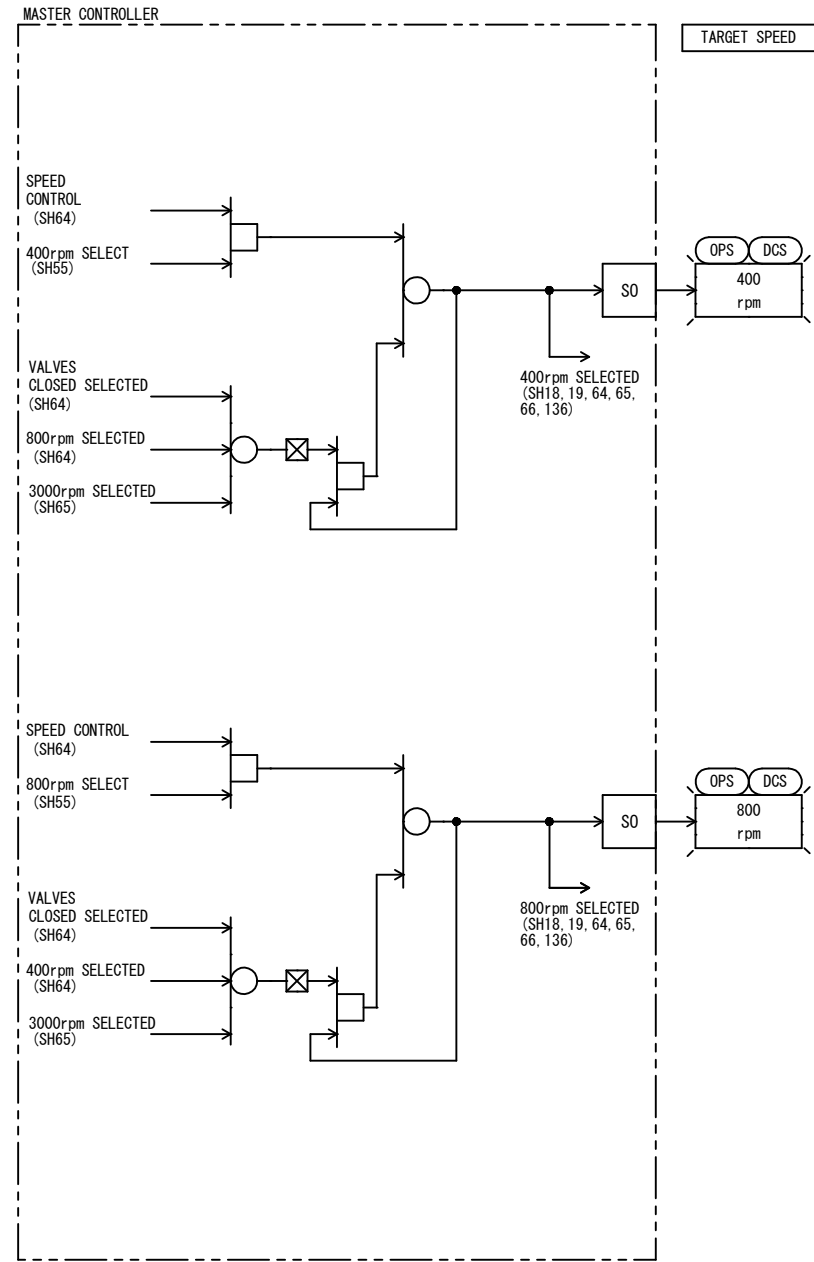
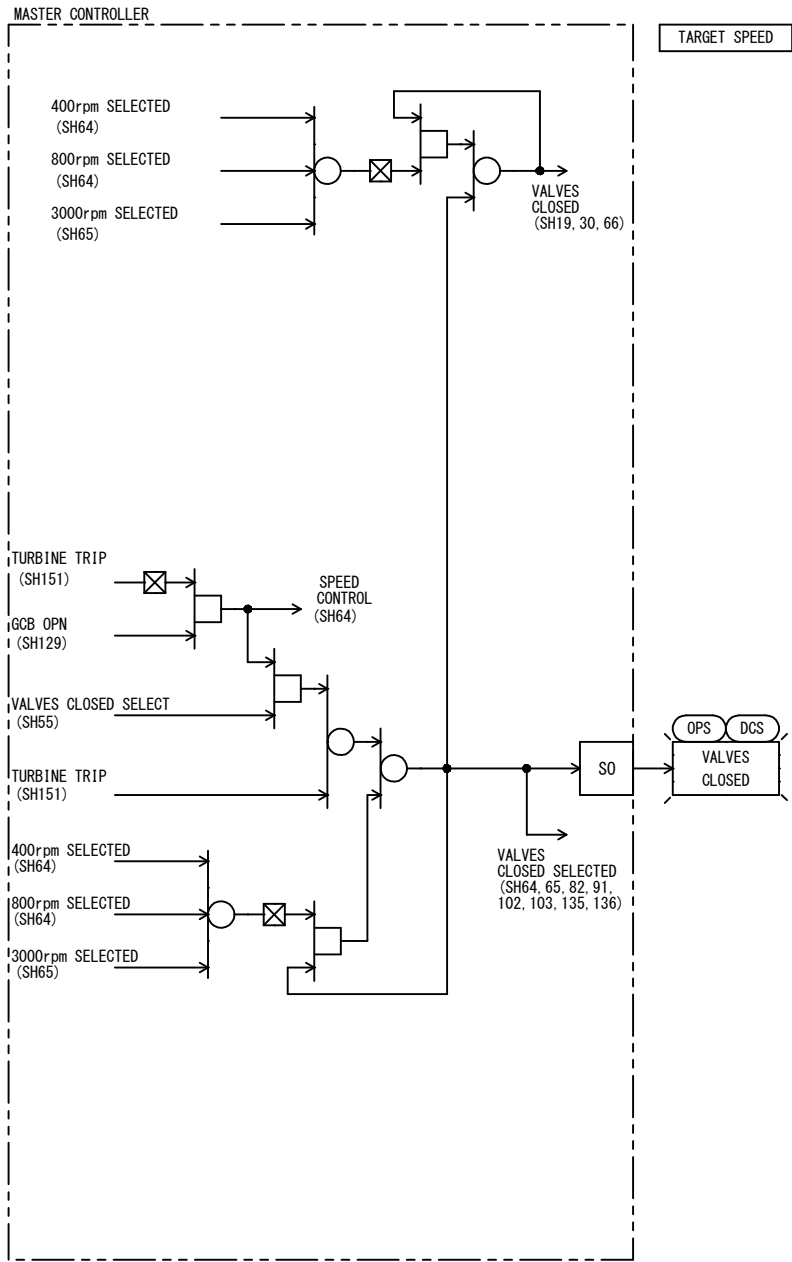


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	OPERATION SIGNAL (7) 7K2K1689 -060
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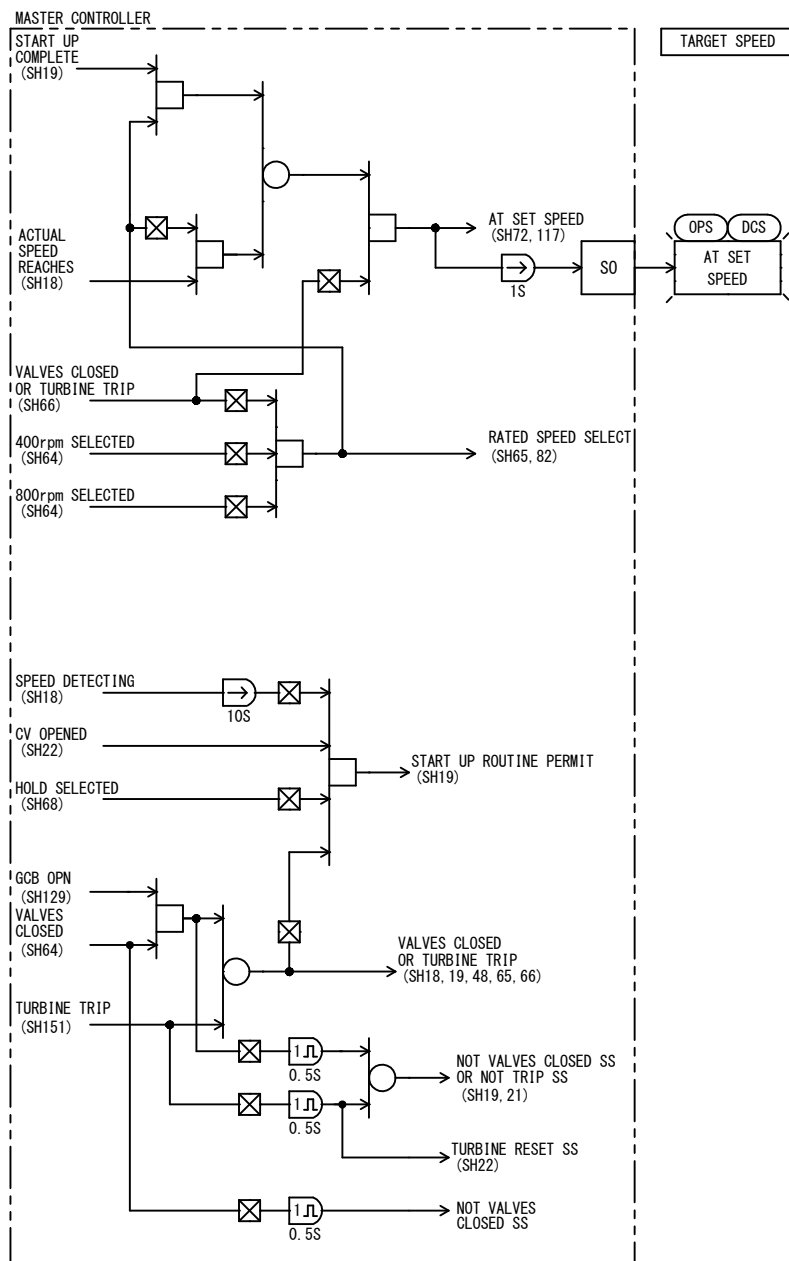
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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F N. Y Jun. 25. 21	TARGET SPEED(1) 7K2K1689 -064
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7K2K1689 -065



REV. 2

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY
T. S/K. T
Jun. 25. 21

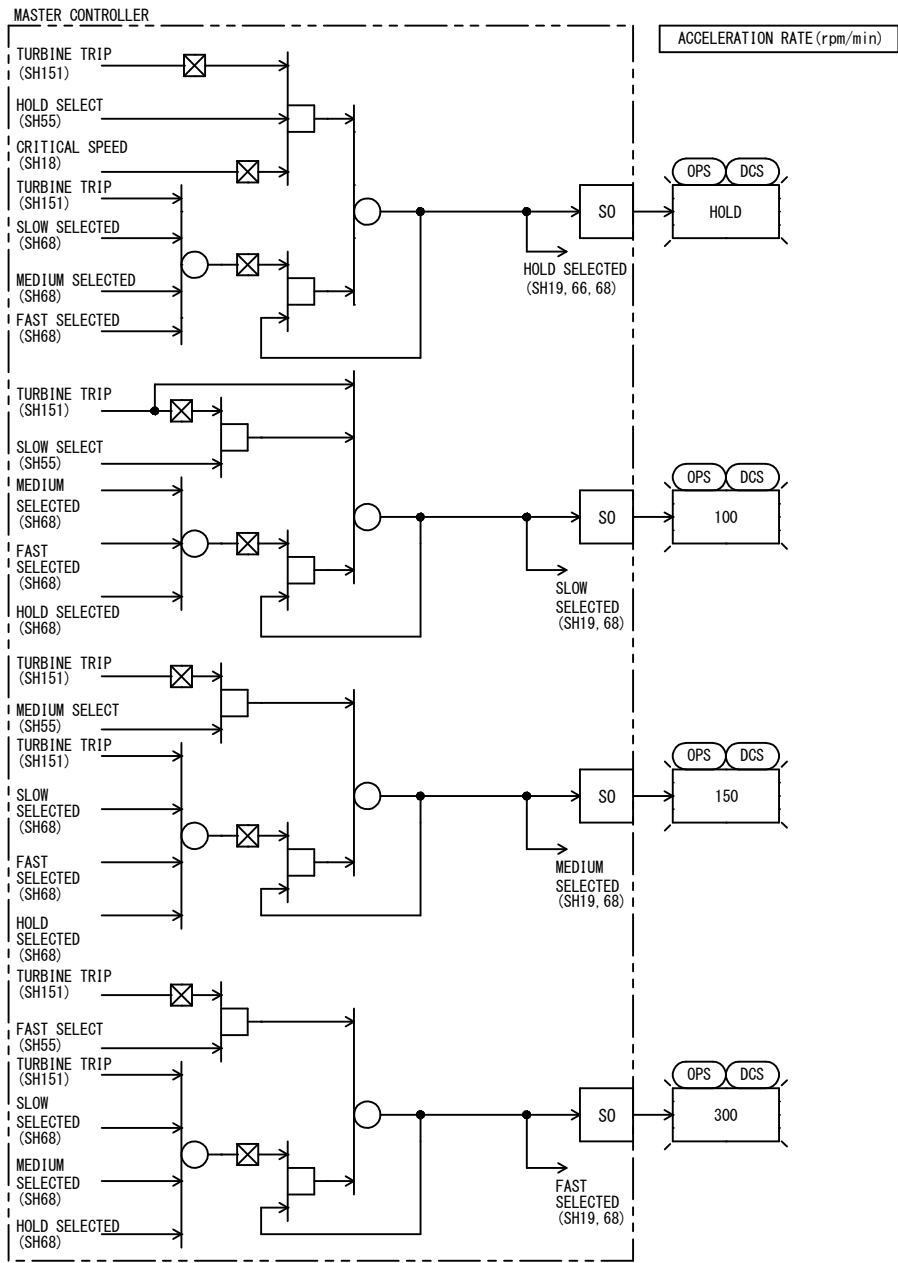
設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

TARGET SPEED (3)

7K2K1689 -066

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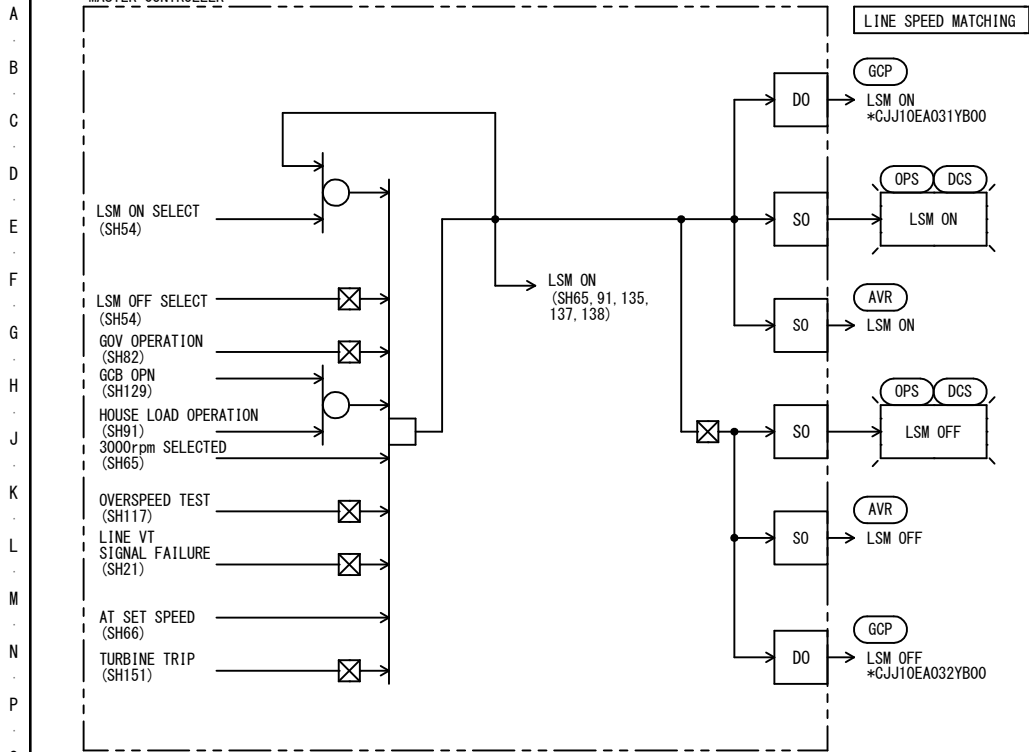
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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	ACCELERATION RATE 7K2K1689 -068
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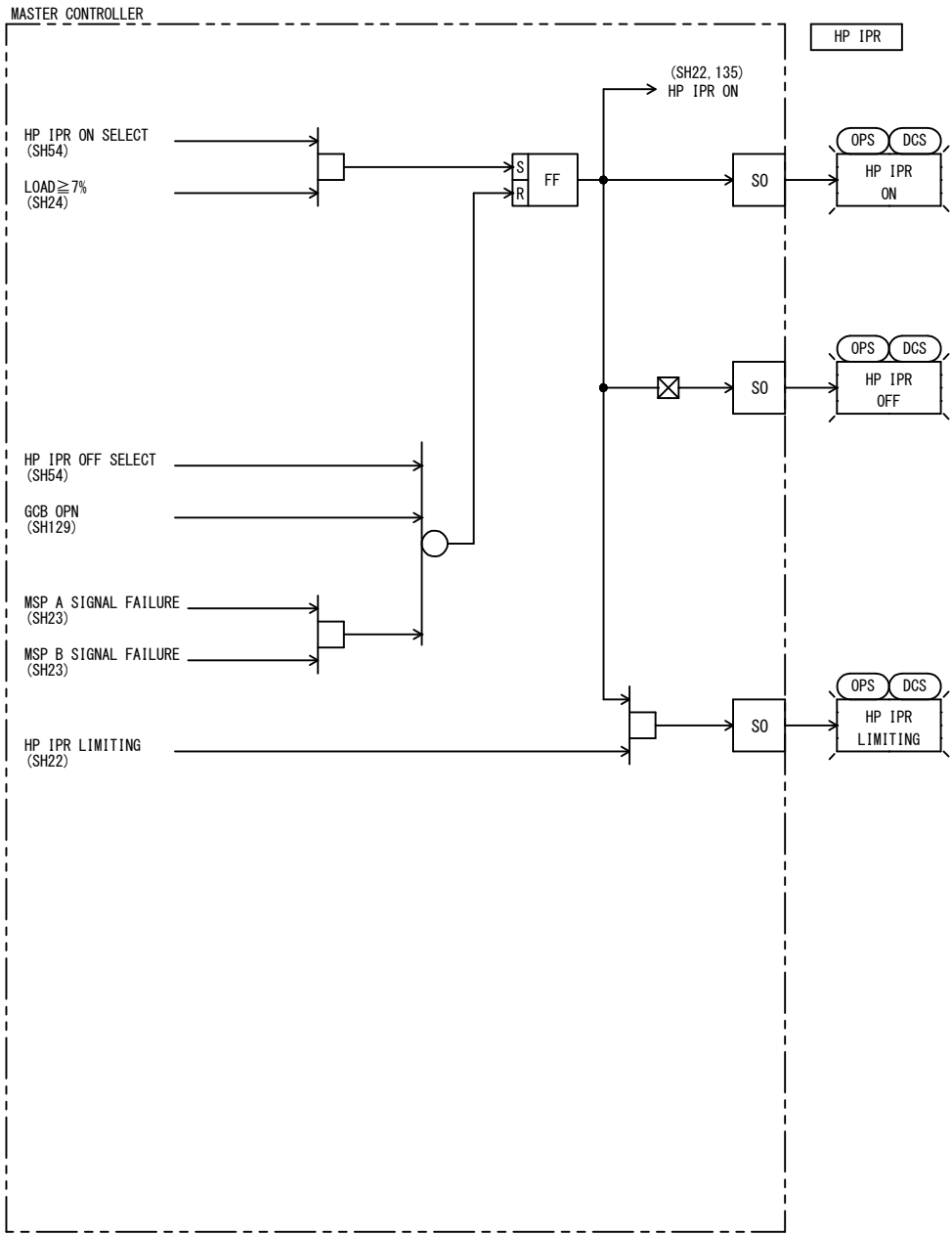
(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	LINE SPEED MATCHER 7K2K1689 -072
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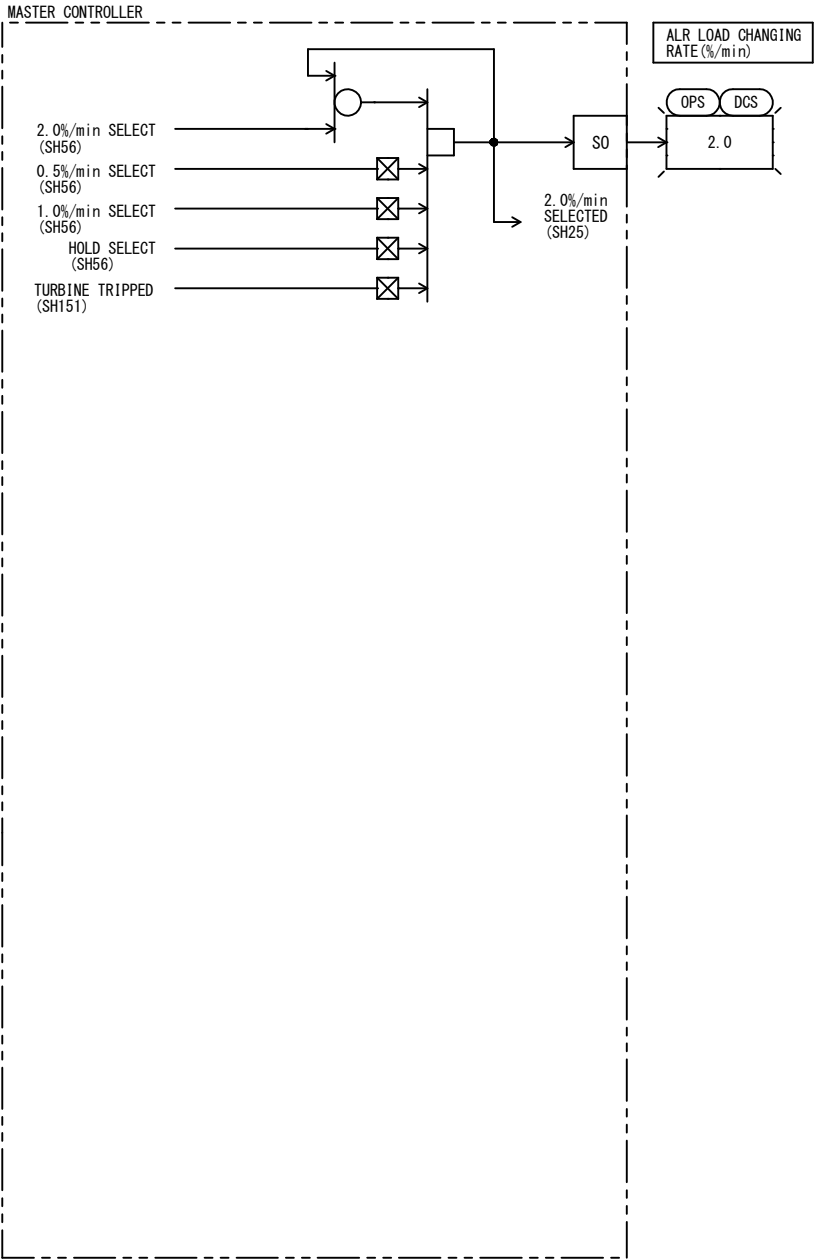
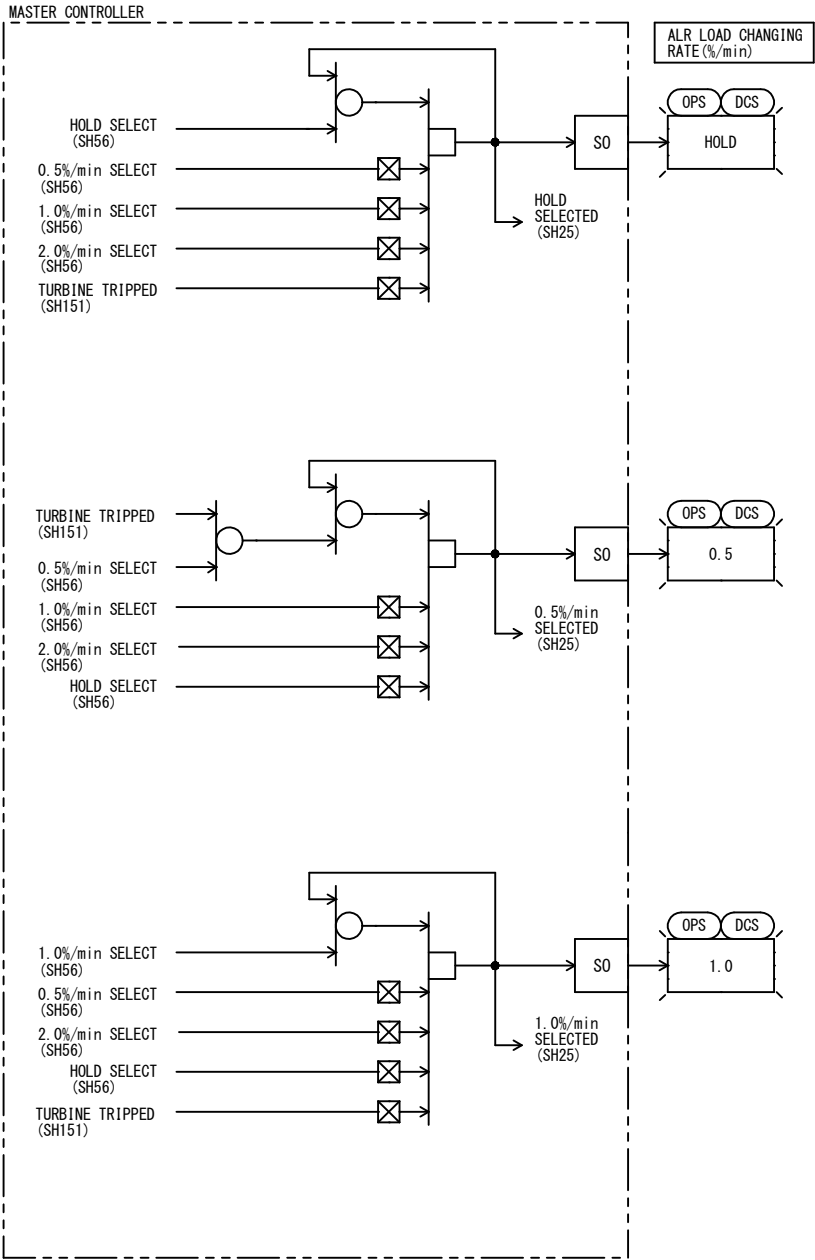
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○	REV. 2

東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	HP IPR 7K2K1689 -073
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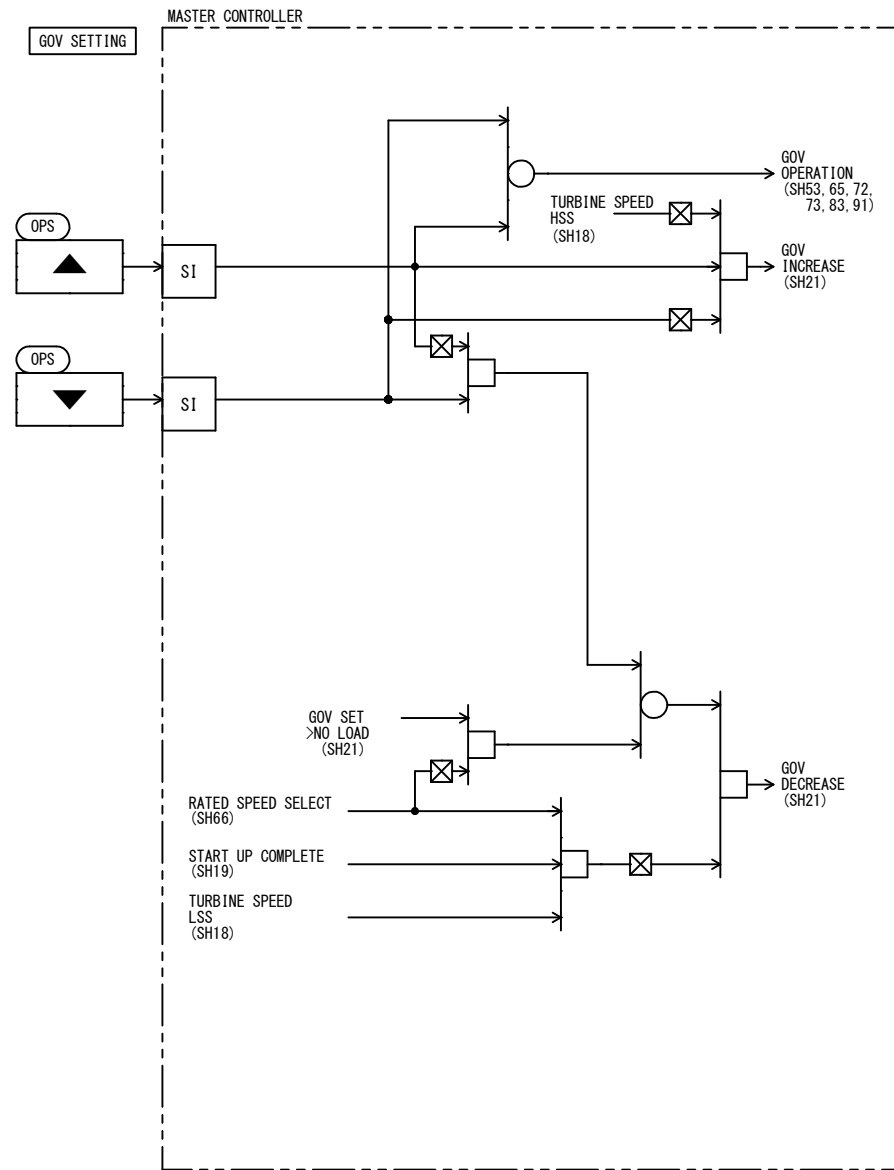
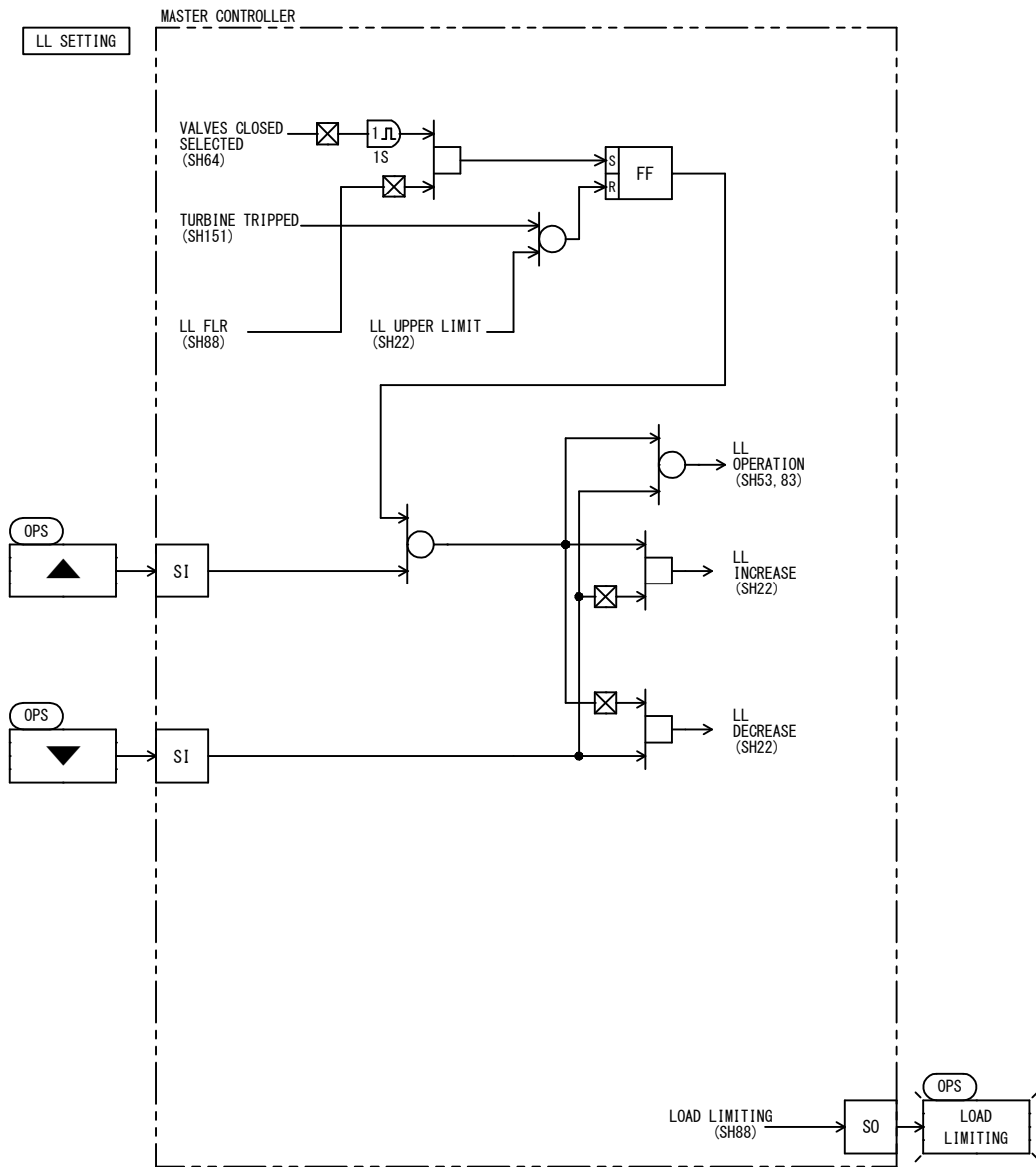
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東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY	設計 DESIGNED BY	LOAD CHANGING RATE
T. S/K. T	----/ R. F N. Y	
Jun. 25. 21	Jun. 25. 21	7K2K1689 -076

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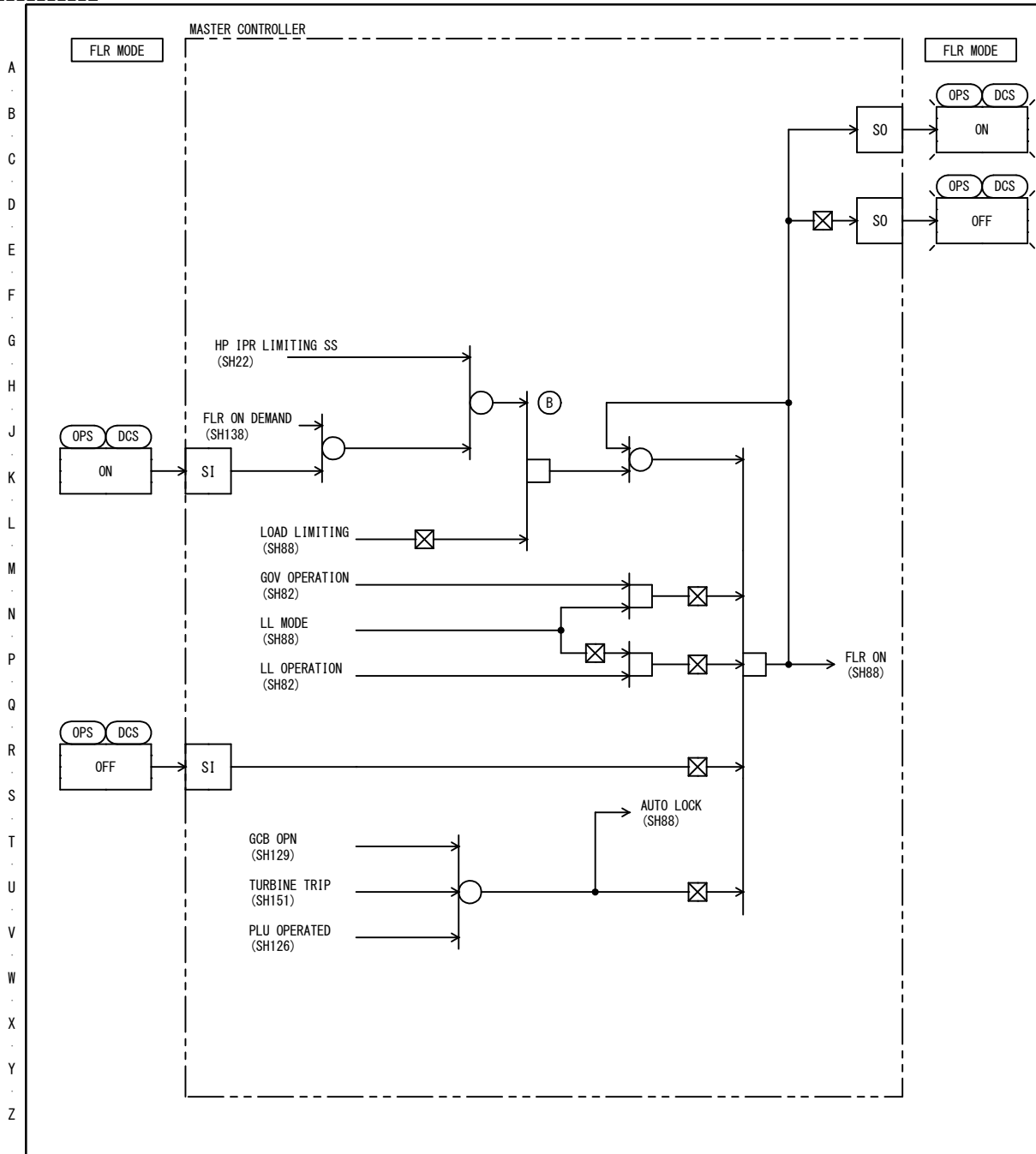


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	GOV/LL OPERATION 7K2K1689 -082
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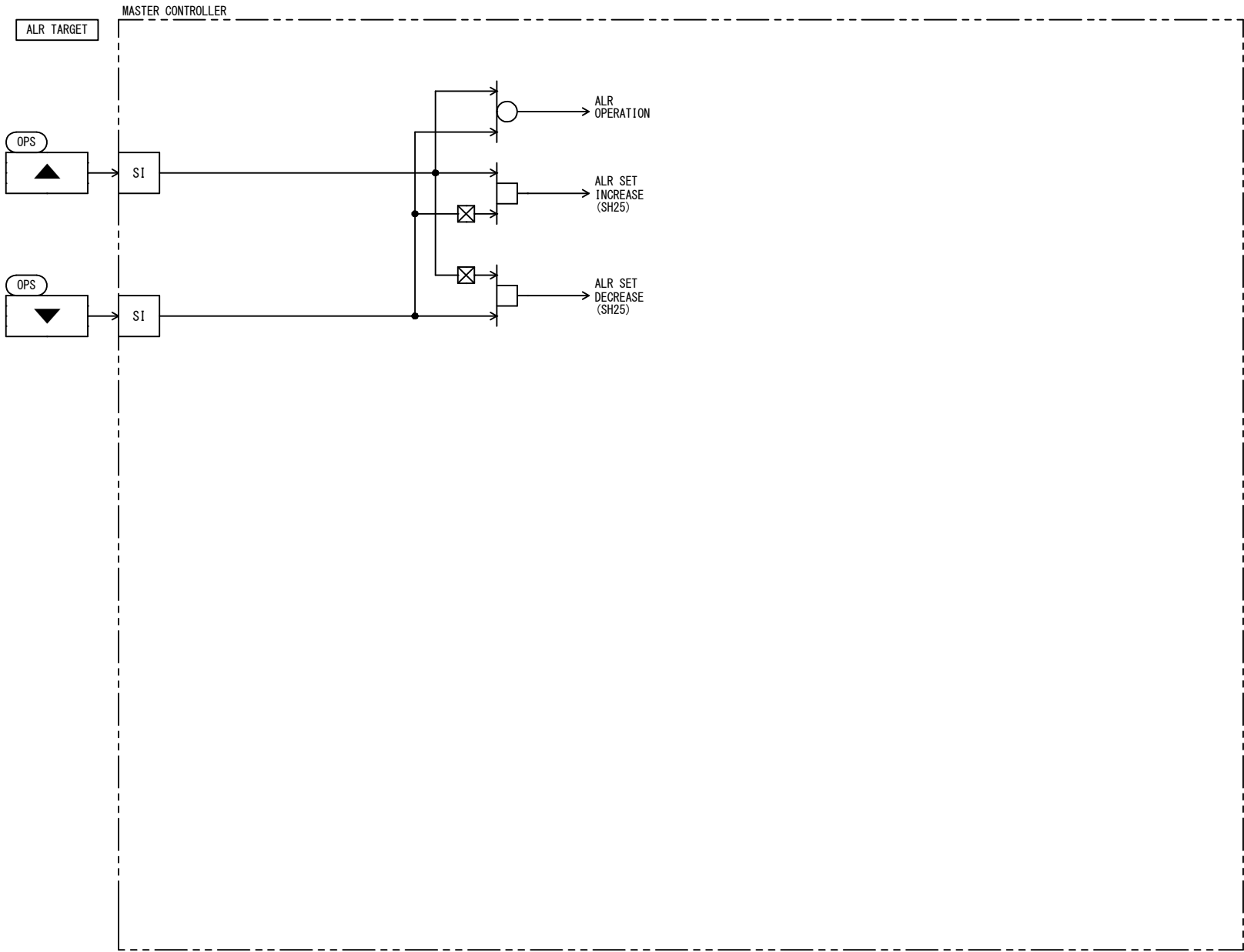
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東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	FLR 7K2K1689 -083
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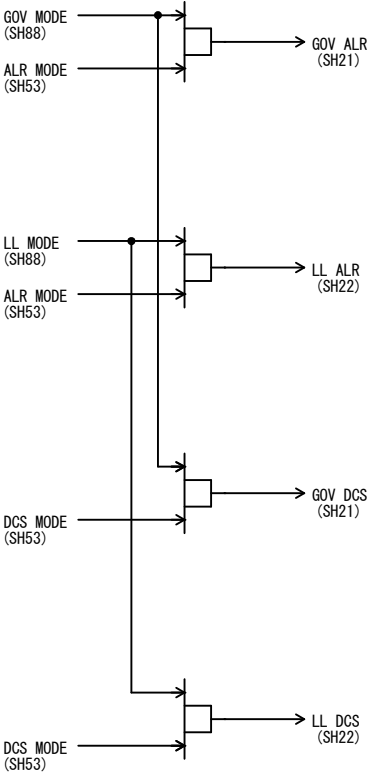
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東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	ALR OPERATION(1) 7K2K1689 -084
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MASTER CONTROLLER



東芝エネルギーシステムズ株式会社
TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	ALR OPERATION (2) 7K2K1689 -085
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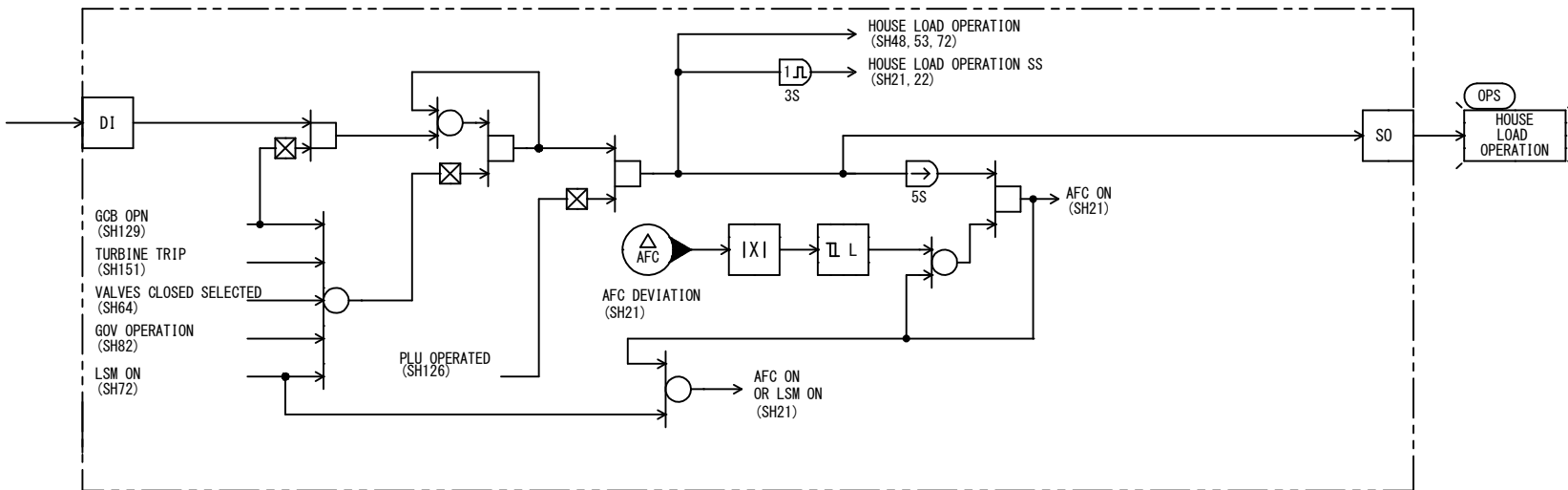


調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	GOV/LL TRANSFER 7K2K1689 -088
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○	REV. 2

(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

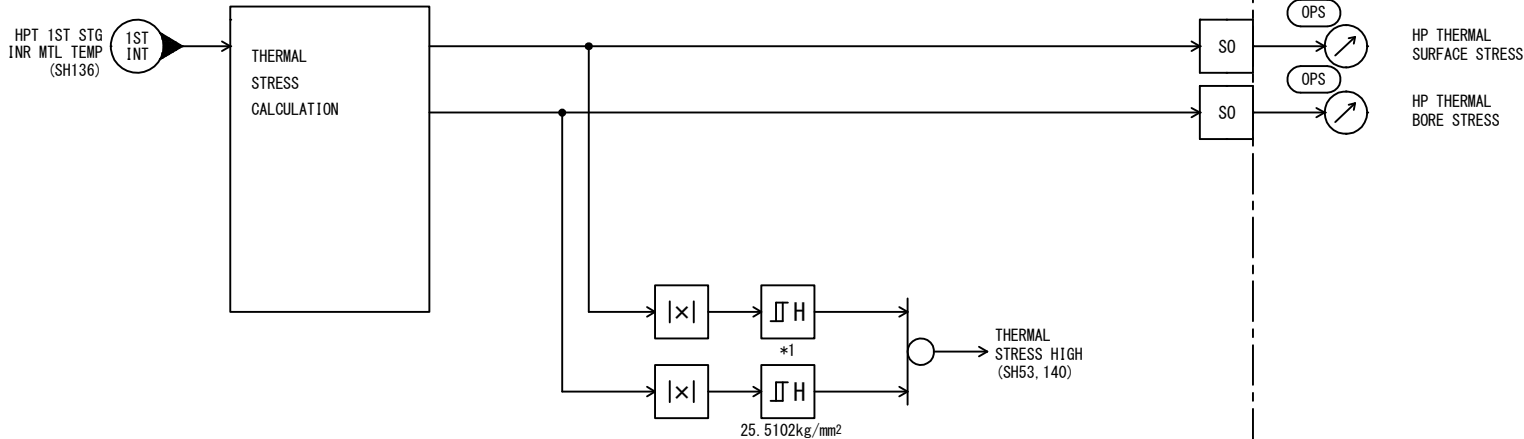
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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	HOUSE LOAD OPERATION 7K2K1689 -091
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*1 Initial Cold:27. 0408kg/mm²
Cold/warm :25kg/mm²
Hot :16. 3265kg/mm²

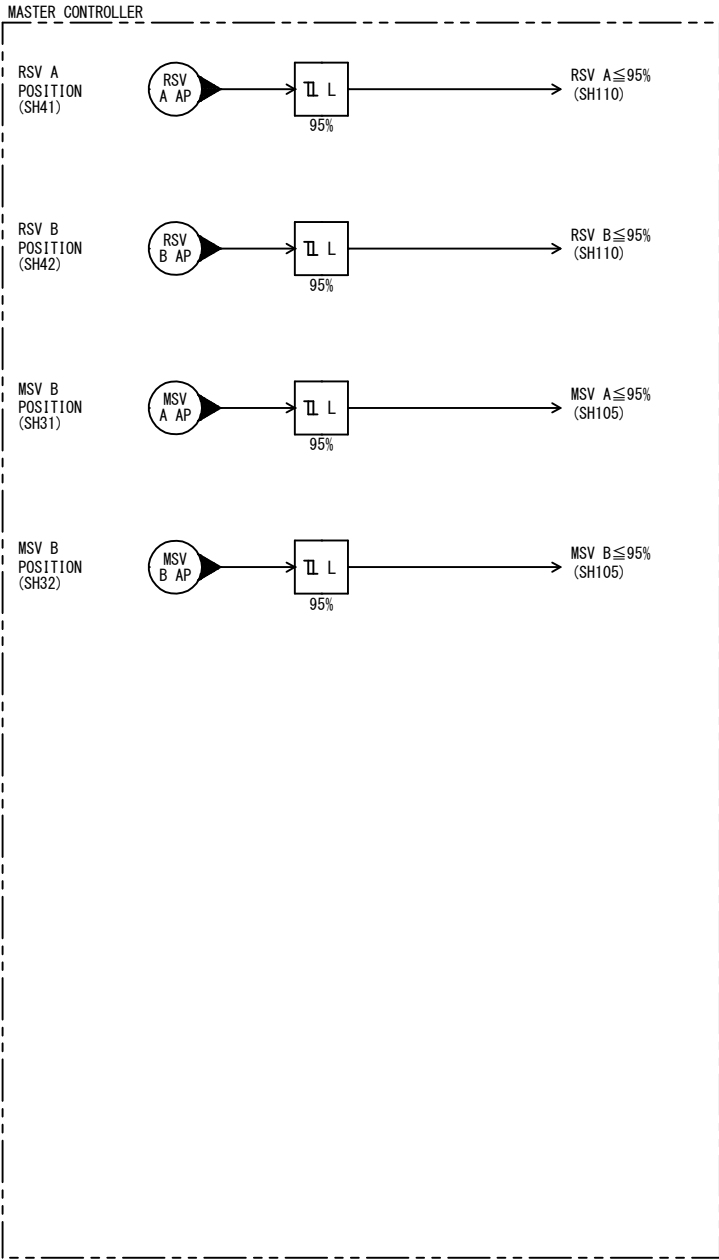
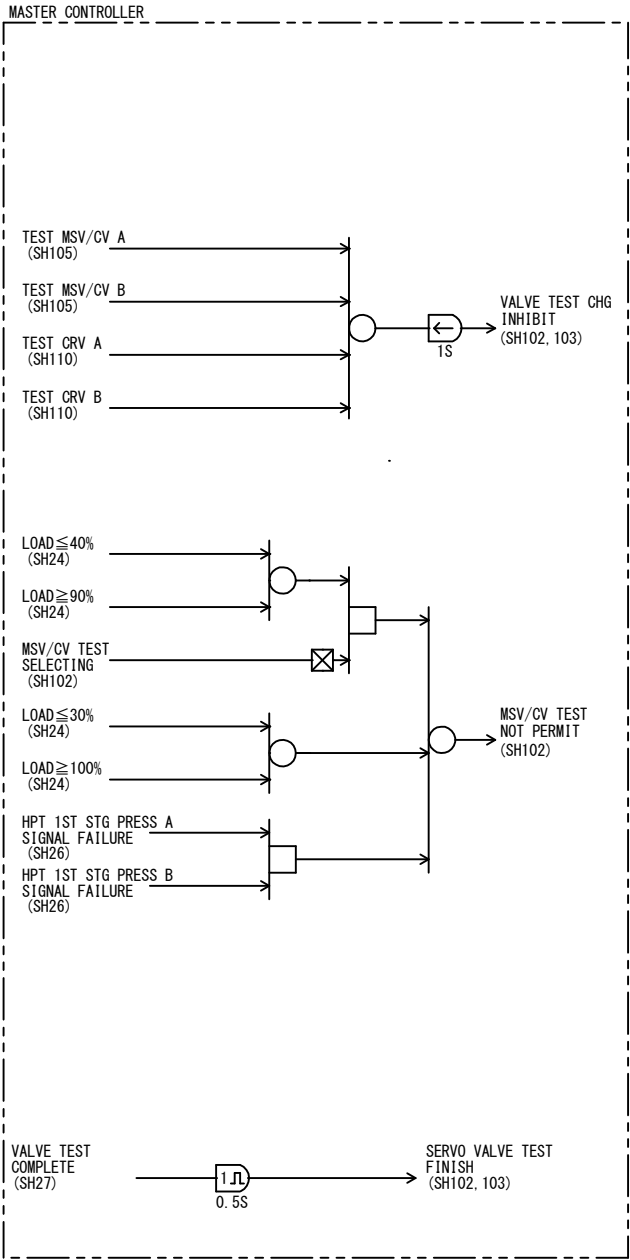
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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	THERMAL STRESS 7K2K1689 -098
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○	REV. 2

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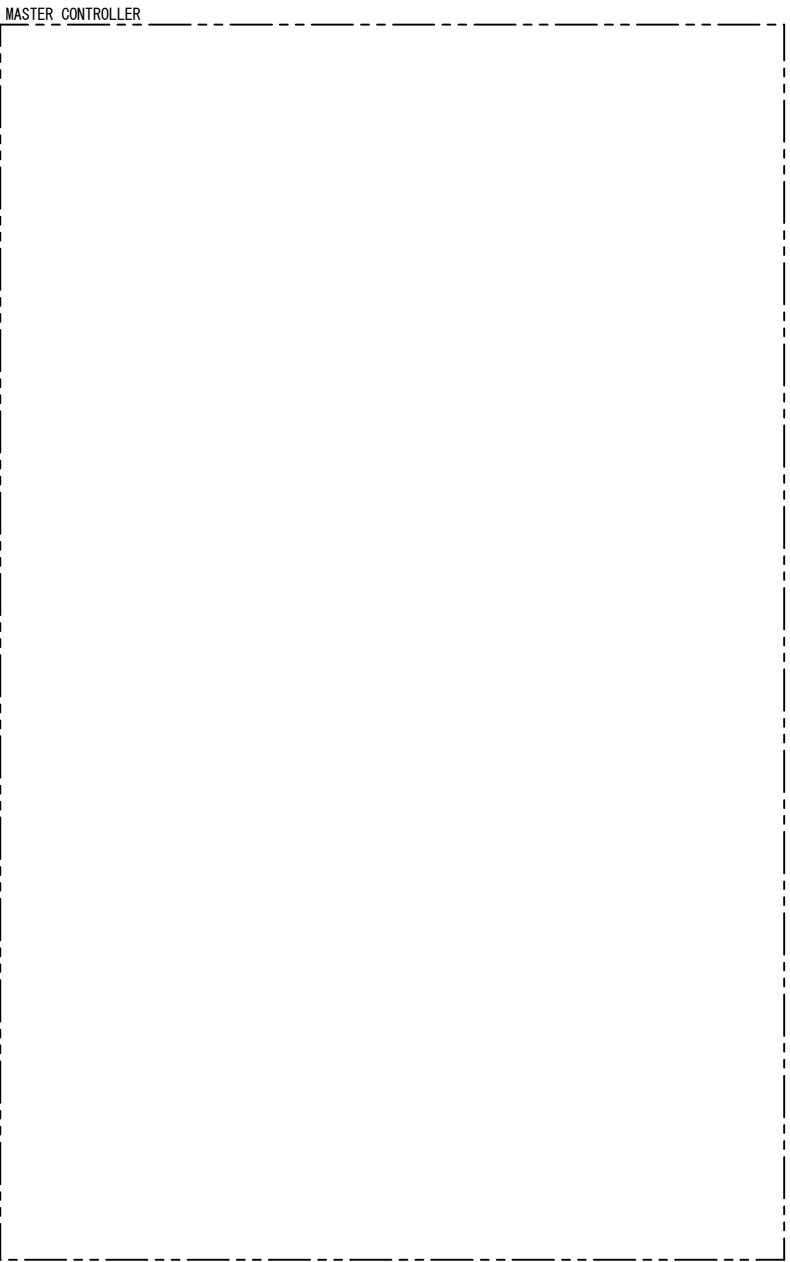
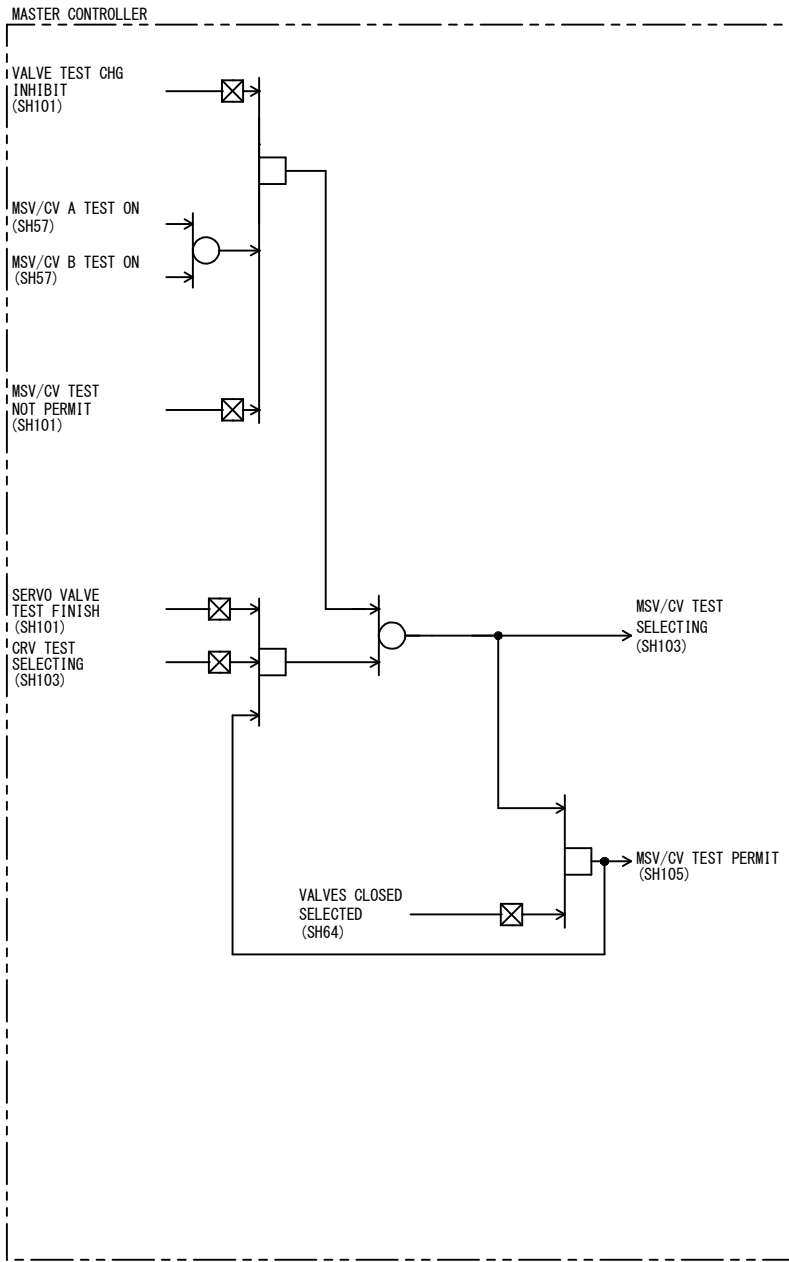
SH

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○	REV. 2

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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	VALVE TEST (1) 7K2K1689 - 101
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○	REV. 2

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Jun. 25. 21

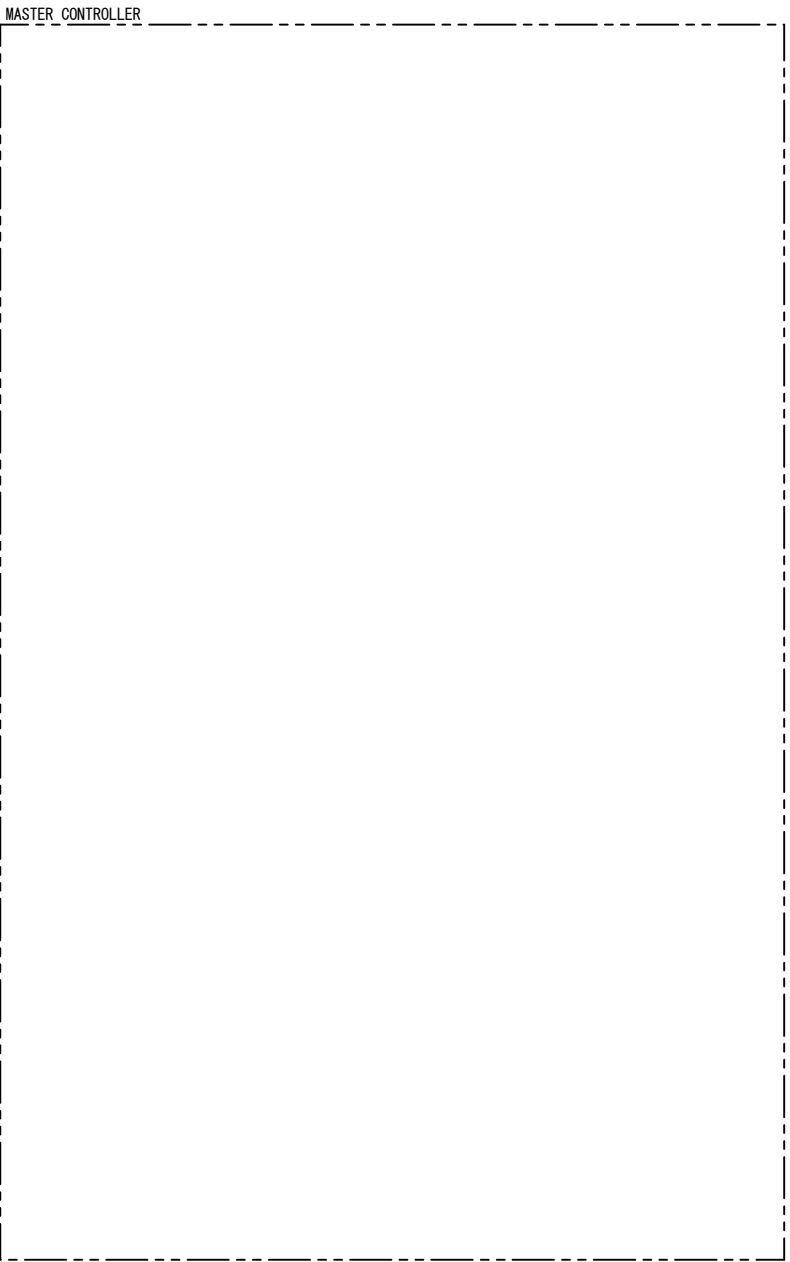
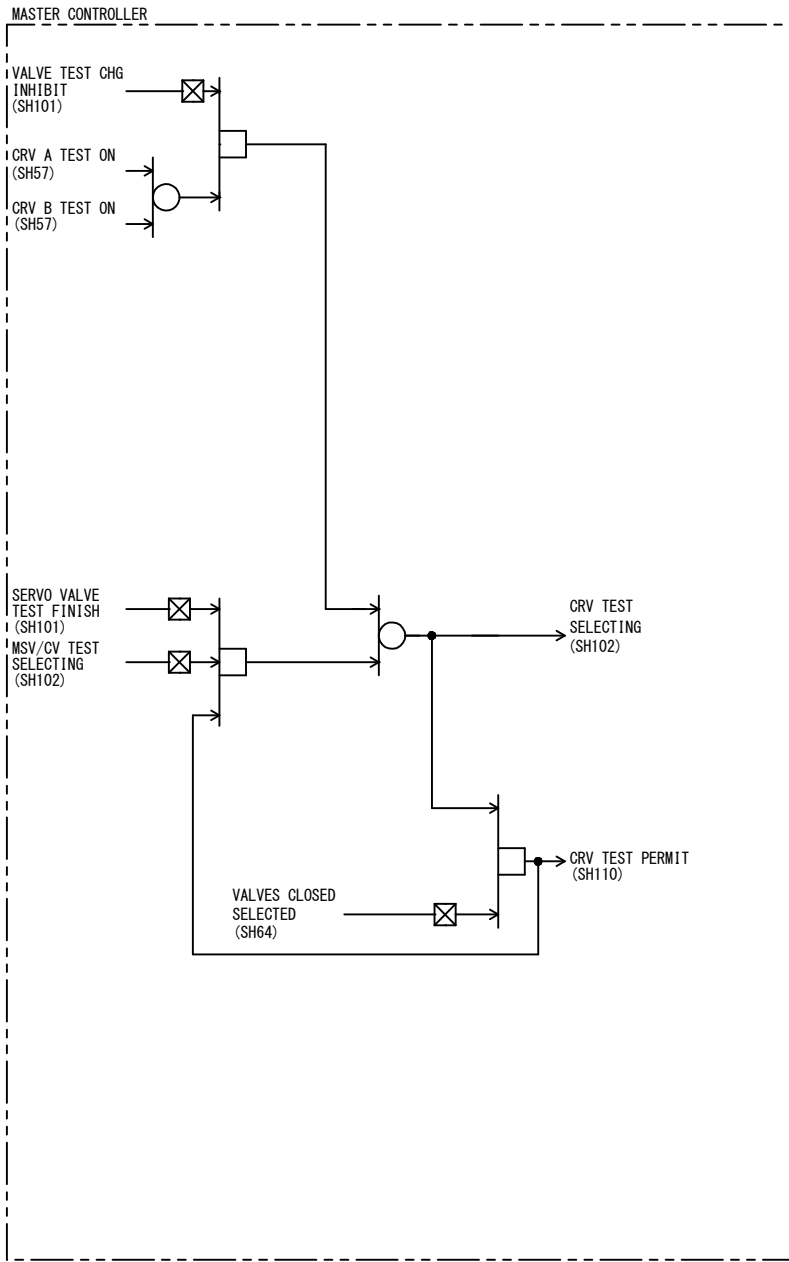
設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

VALVE TEST (2)

7K2K1689 -102

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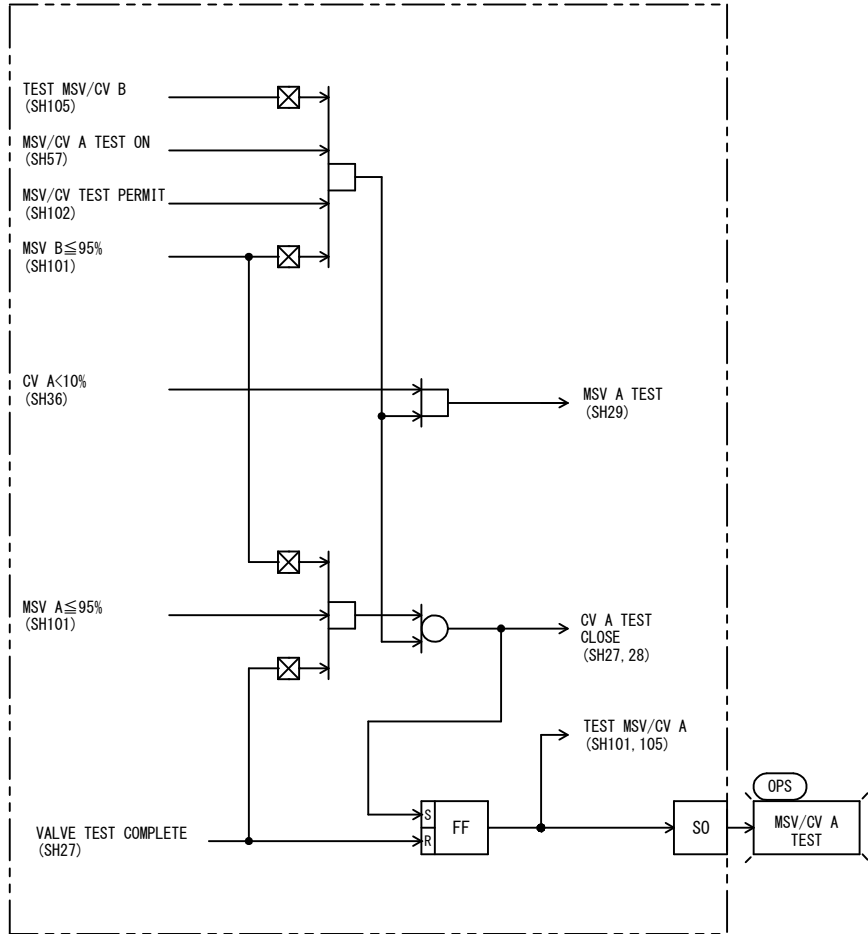
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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

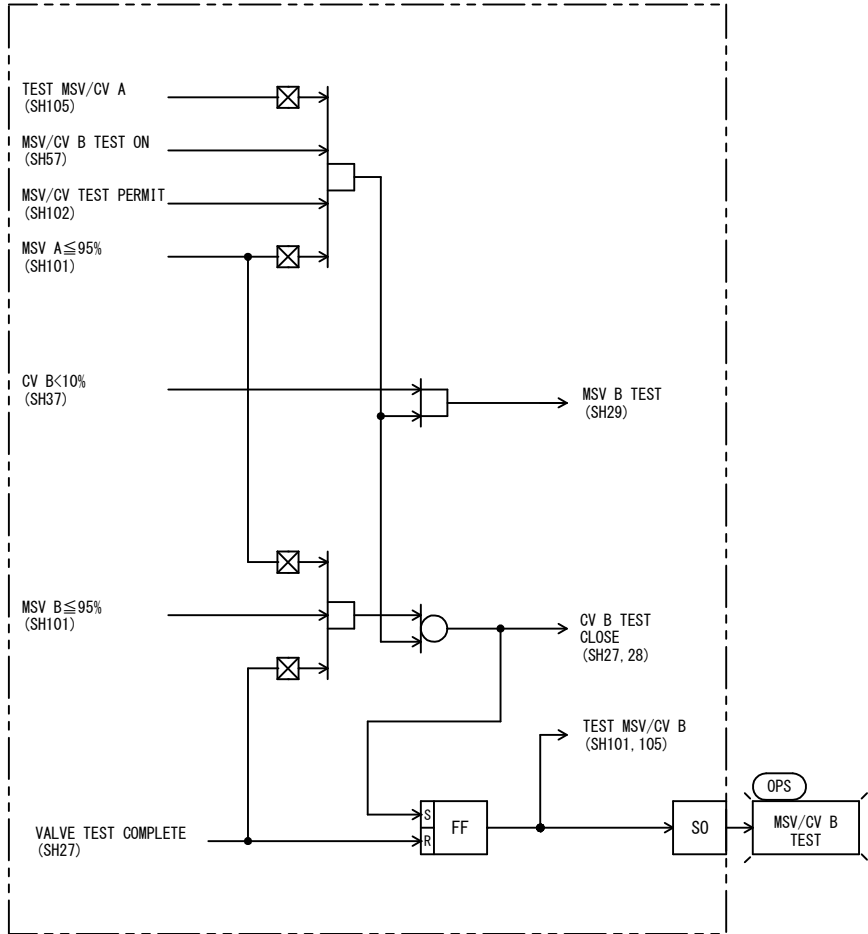
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	VALVE TEST (3) 7K2K1689 -103
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SH

MASTER CONTROLLER



MASTER CONTROLLER



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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

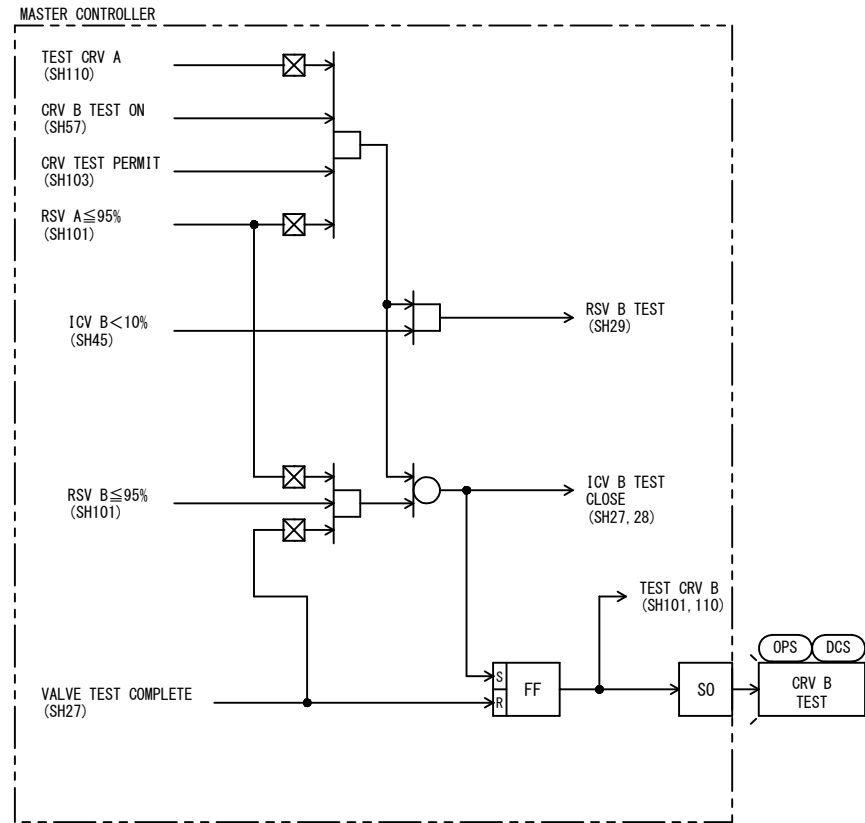
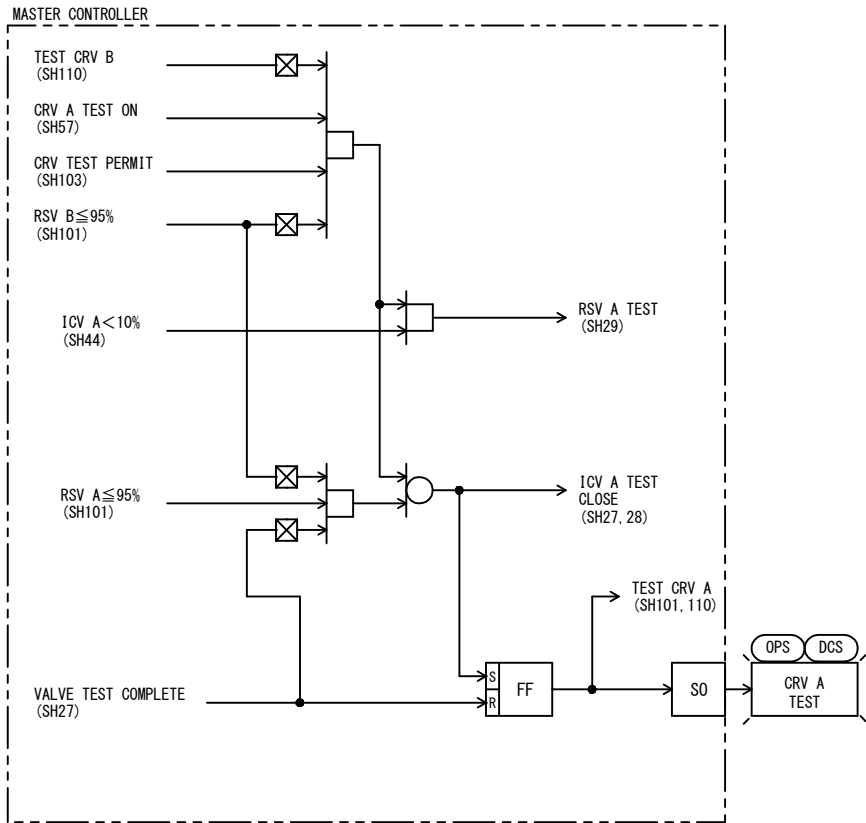
調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

MSV/CV TEST

7K2K1689 - 105

SH

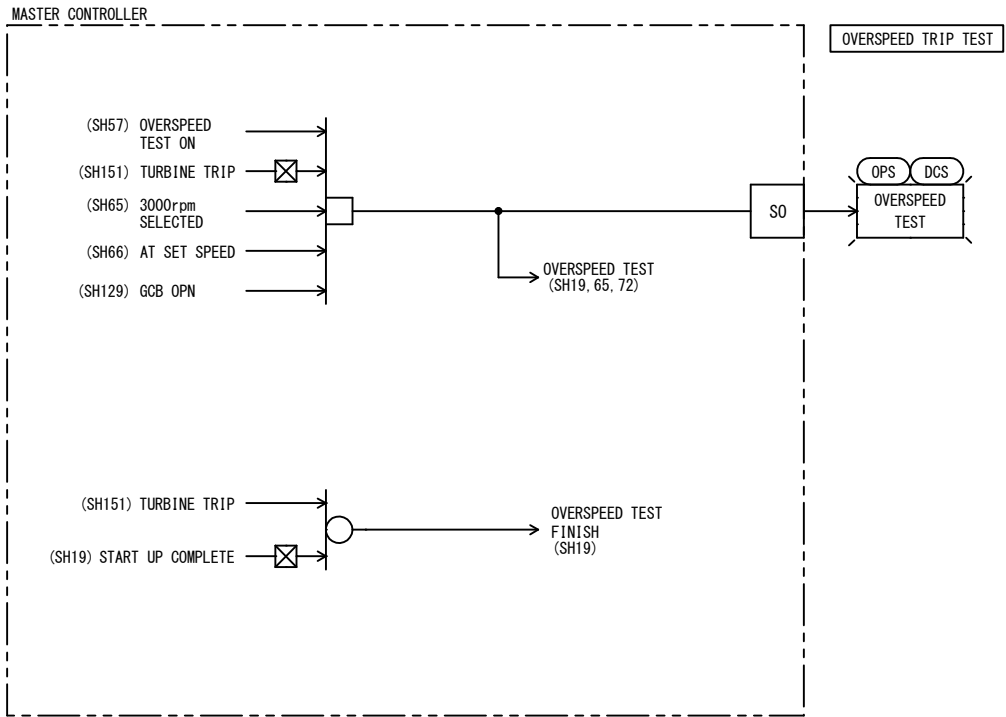


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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	CRV TEST 7K2K1689 - 110
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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	OVERSPEED TEST 7K2K1689 -117
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MASTER CONTROLLER

BACKUP OVERSPEED CIRCUIT TEST
(SH120)

OVERSPEED CIRCUIT A TEST
(SH059)

OVERSPEED CIRCUIT B TEST
(SH059)

OVERSPEED CIRCUIT C TEST
(SH059)

1S

1S

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OVERSPEED
CIRCUIT TEST
(SH120)

OVERSPEED CIRCUIT A TEST
(SH17)

OVERSPEED CIRCUIT B TEST
(SH17)

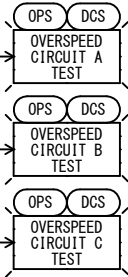
OVERSPEED CIRCUIT C TEST
(SH17)

OVERSPEED A OPERATED
(SH17)

OVERSPEED B OPERATED
(SH17)

OVERSPEED C OPERATED
(SH17)

OVERSPEED CIRCUIT TEST



SH

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調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
---/ R. F
N. Y
Jun. 25. 21

OVERSPEED CIRCUIT TEST

7K2K1689 - 119

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MASTER CONTROLLER

OVERSPEED CIRCUIT TEST
(SH119)

BACKUP OVERSPEED CIRCUIT A TEST
(SH60)

BACKUP OVERSPEED CIRCUIT B TEST
(SH60)

BACKUP OVERSPEED CIRCUIT C TEST
(SH60)

TS
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BACKUP OVERSPEED
CIRCUIT TEST
(SH119)

BACKUP OVERSPEED
CIRCUIT A TEST
(SH17)

BACKUP OVERSPEED
CIRCUIT B TEST
(SH17)

BACKUP OVERSPEED
CIRCUIT C TEST
(SH17)

BACKUP OVERSPEED A OPERATED
(SH17)

BACKUP OVERSPEED B OPERATED
(SH17)

BACKUP OVERSPEED C OPERATED
(SH17)

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SO

SO

BACKUP OVERSPEED CIRCUIT TEST

OPS DCS

BACKUP OVERSPEED
CIRCUIT A TEST

OPS DCS

BACKUP OVERSPEED
CIRCUIT B TEST

OPS DCS

BACKUP OVERSPEED
CIRCUIT C TEST

SH

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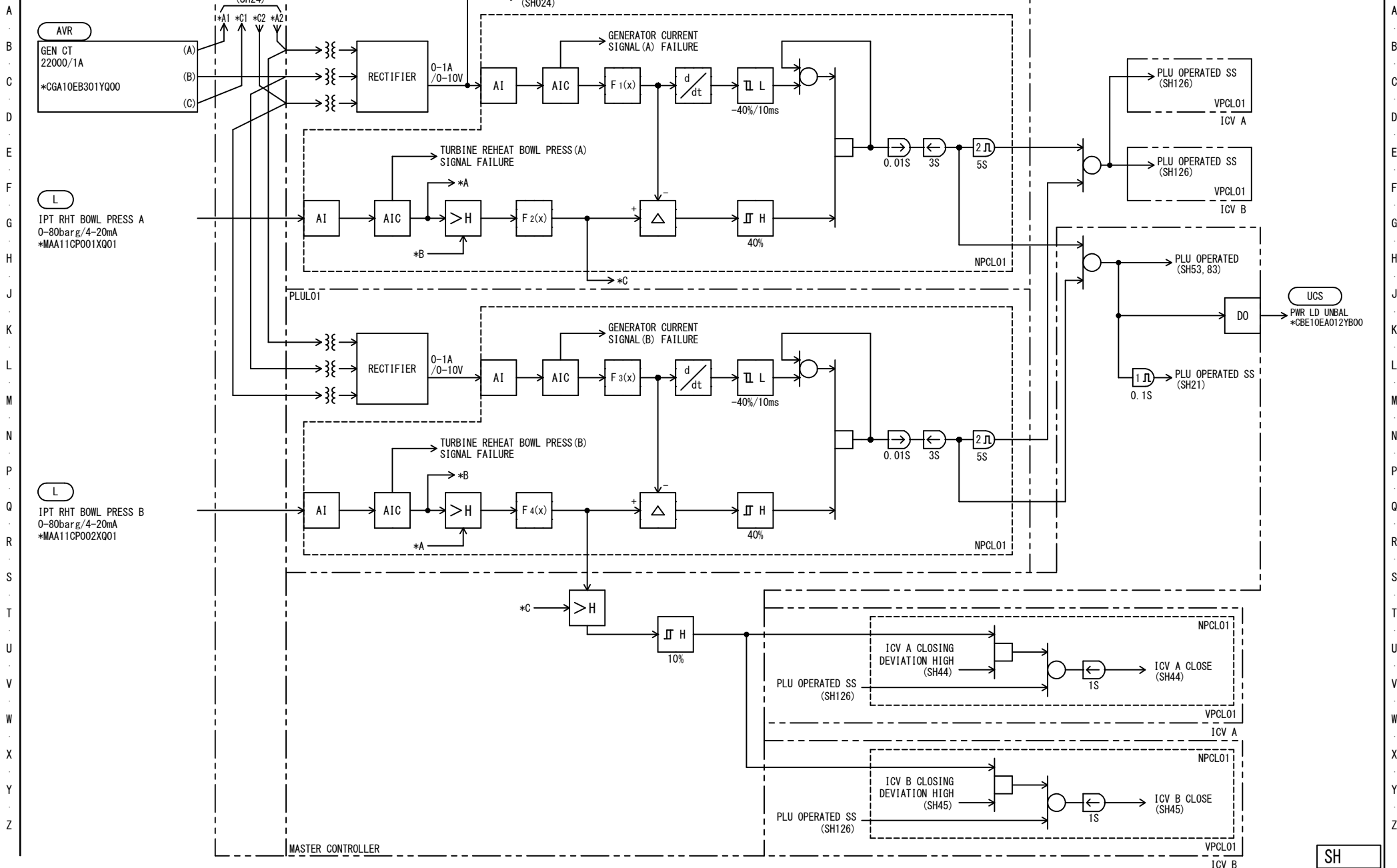
調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
----/ R. F
N. Y
Jun. 25. 21

BACKUP OVERSPEED CIRCUIT TEST

7K2K1689 - 120

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(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

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調査 CHECKED BY
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Jun. 25. 21

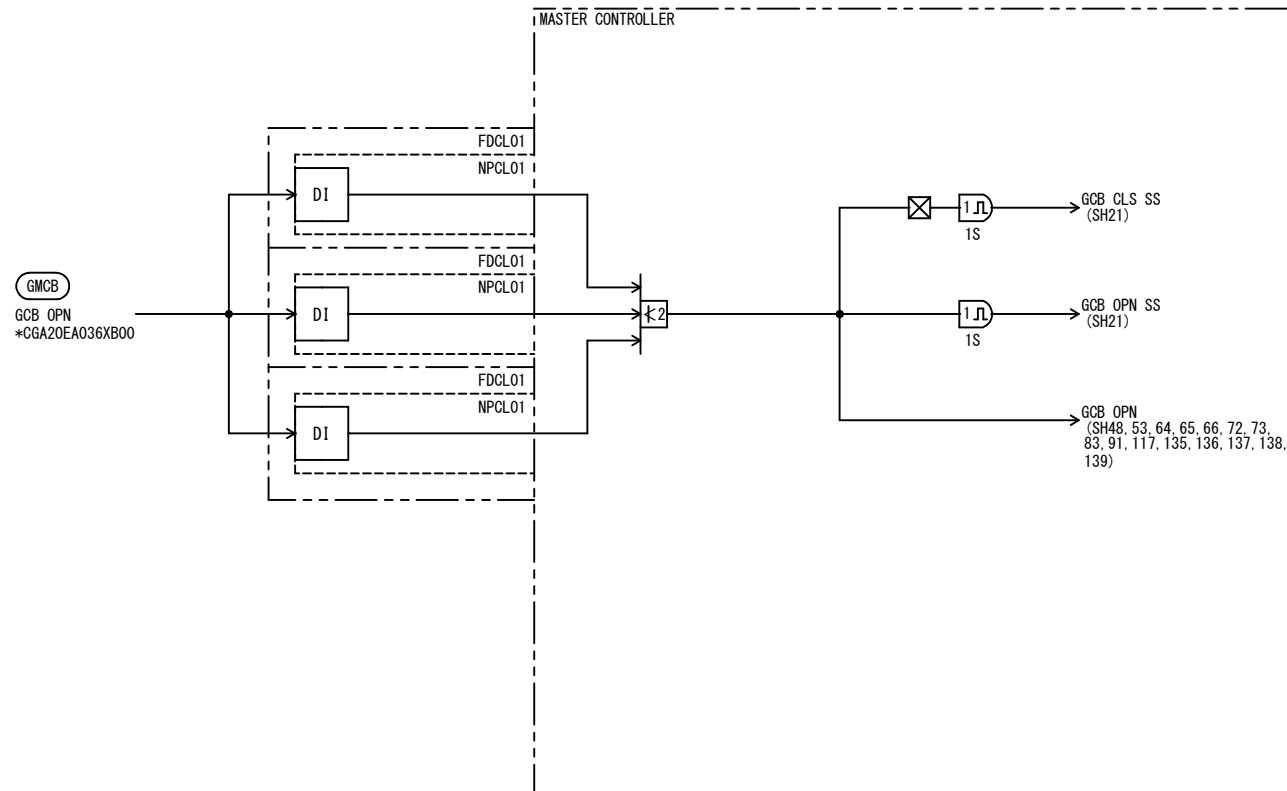
設計 DESIGNED BY
R. F.
N. Y.
Jun. 25. 21

POWER LOAD UNBALANCE

7K2K1689 - 126

SH

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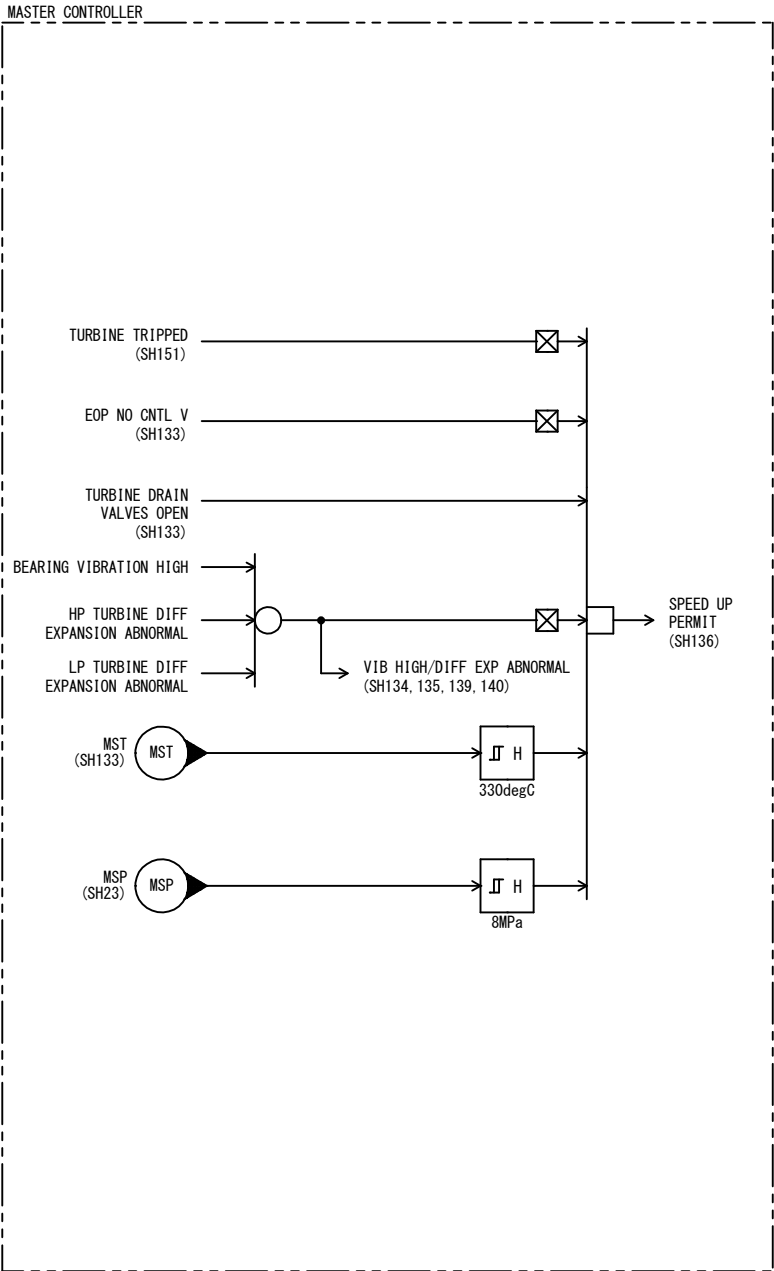
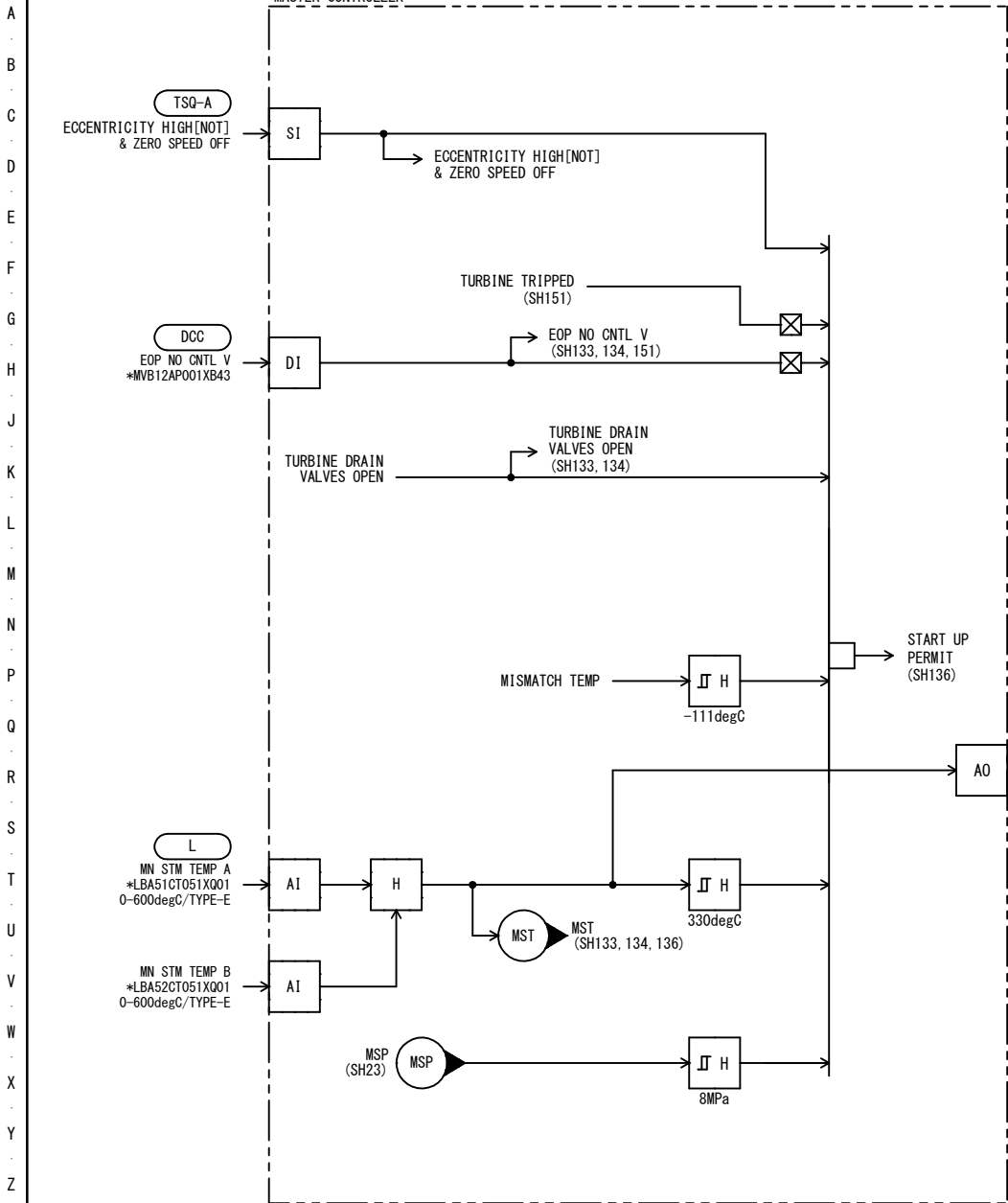
(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

REV. 2

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F N. Y Jun. 25. 21	52G INPUT 7K2K1689 -129
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SH



SH

	REV. 2

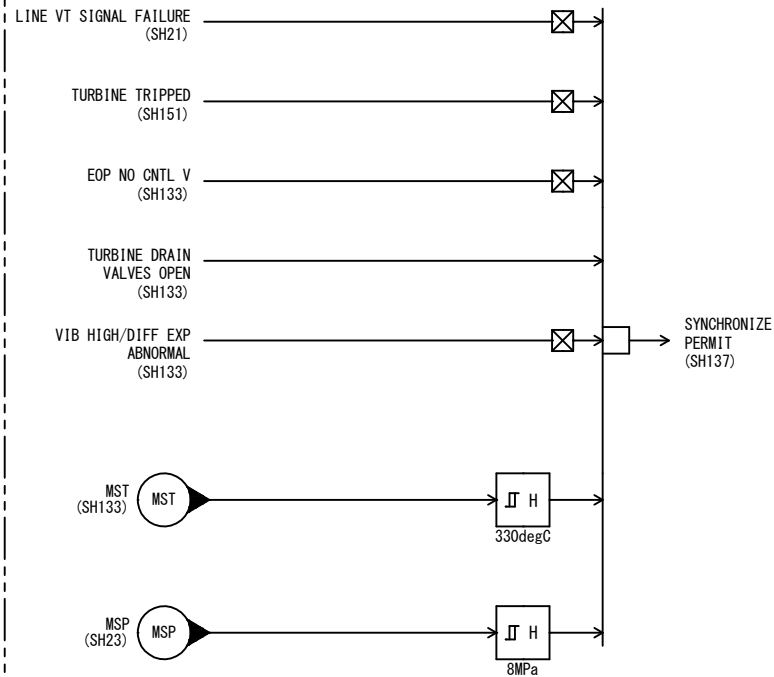
(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

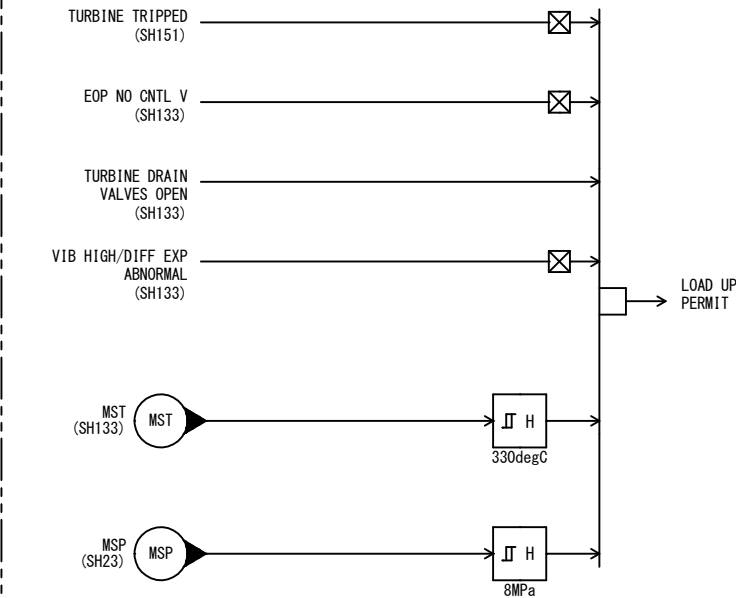
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F. N. Y. Jun. 25. 21	AUTOMATIC START UP PERMIT CONDITION(2) 7K2K1689 -133
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MASTER CONTROLLER



MASTER CONTROLLER

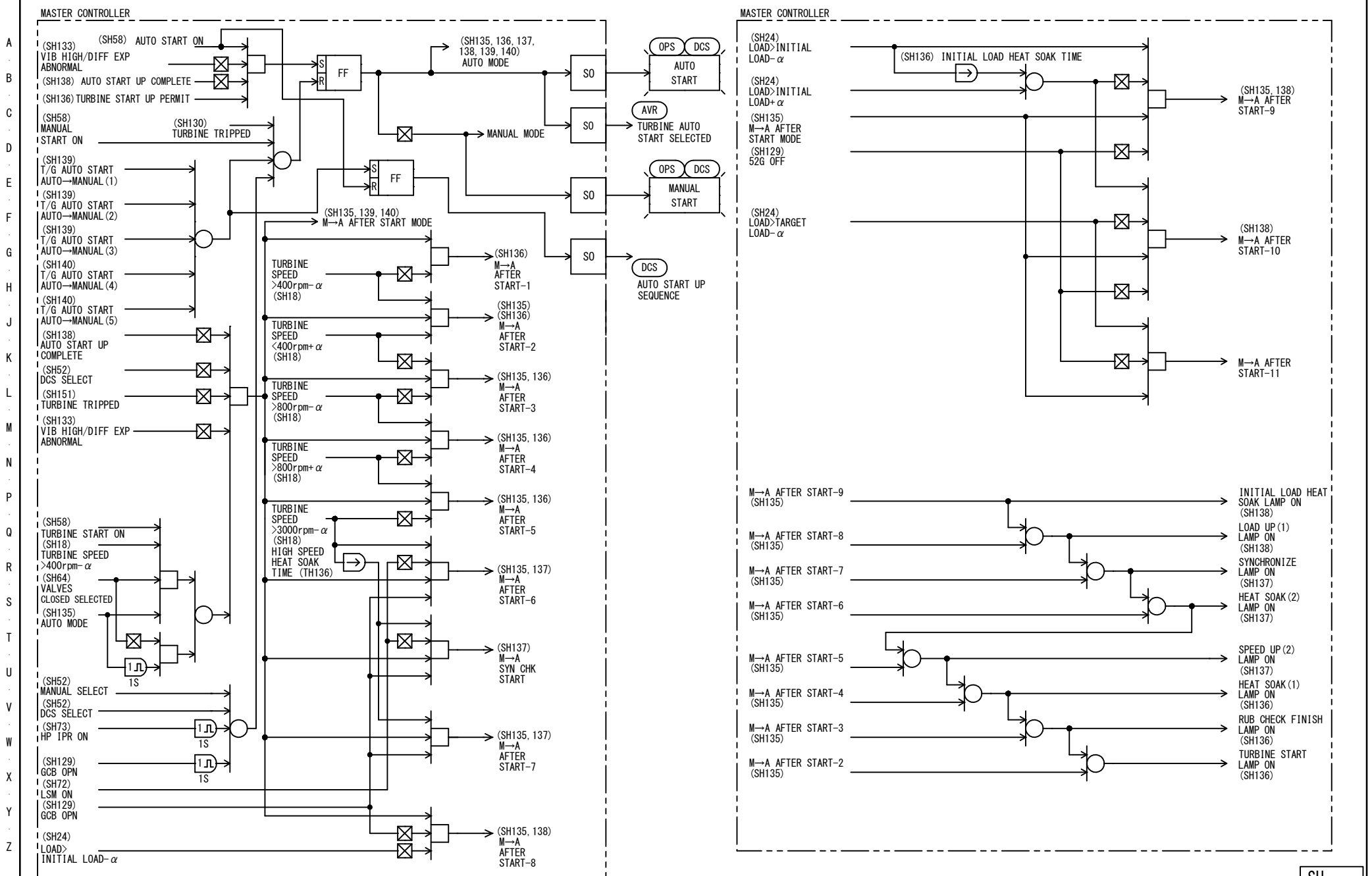


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○	REV. 2

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

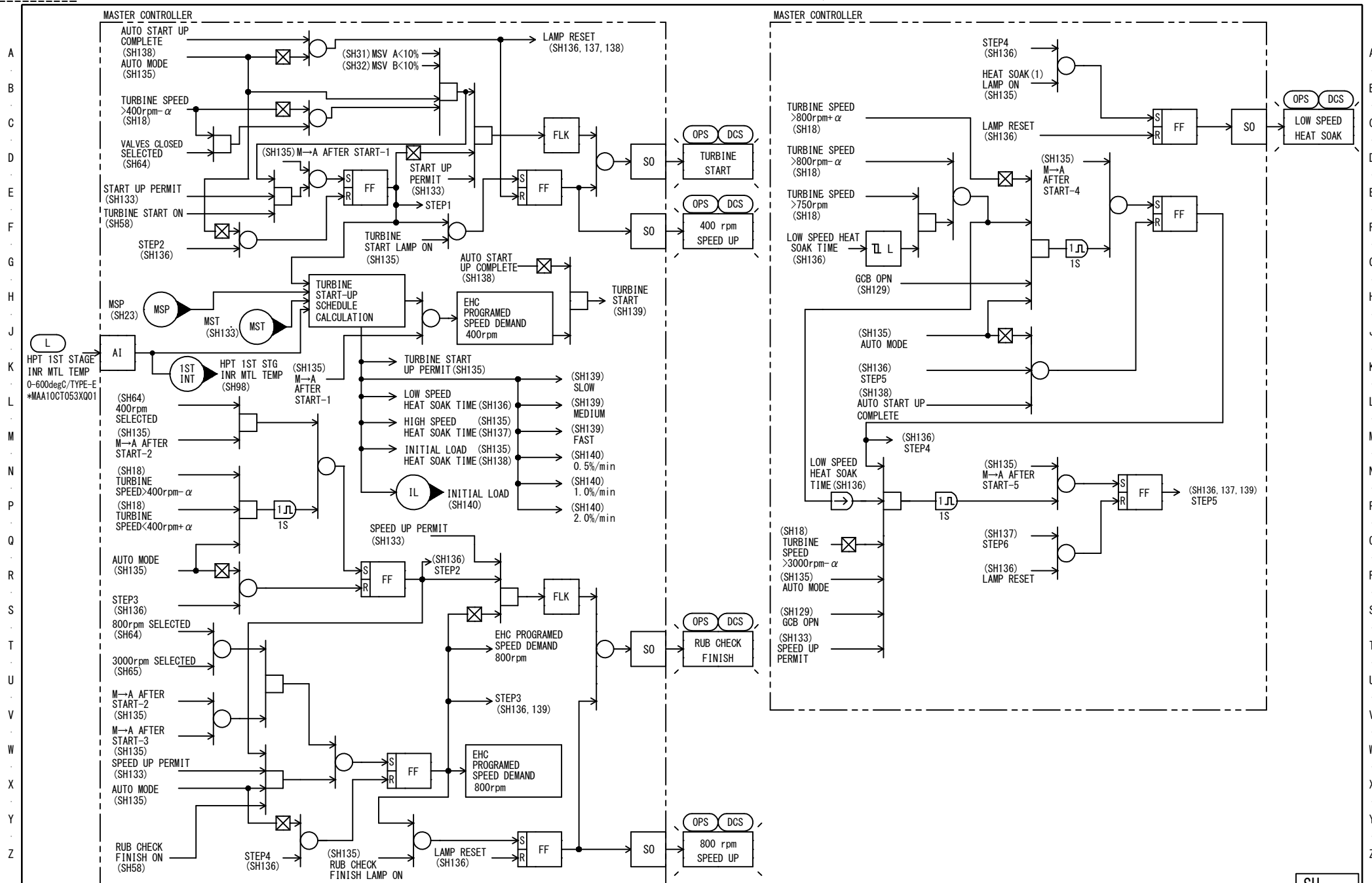
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ---/ R. F N. Y Jun. 25. 21	AUTOMATIC START UP PERMIT CONDITION(3) 7K2K1689 -134
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SH

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY R. F N. Y Jun. 25. 21	AUTOMATIC SPEED UP(1) 7K2K1689 -135
---	---	---



REV. 1

(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

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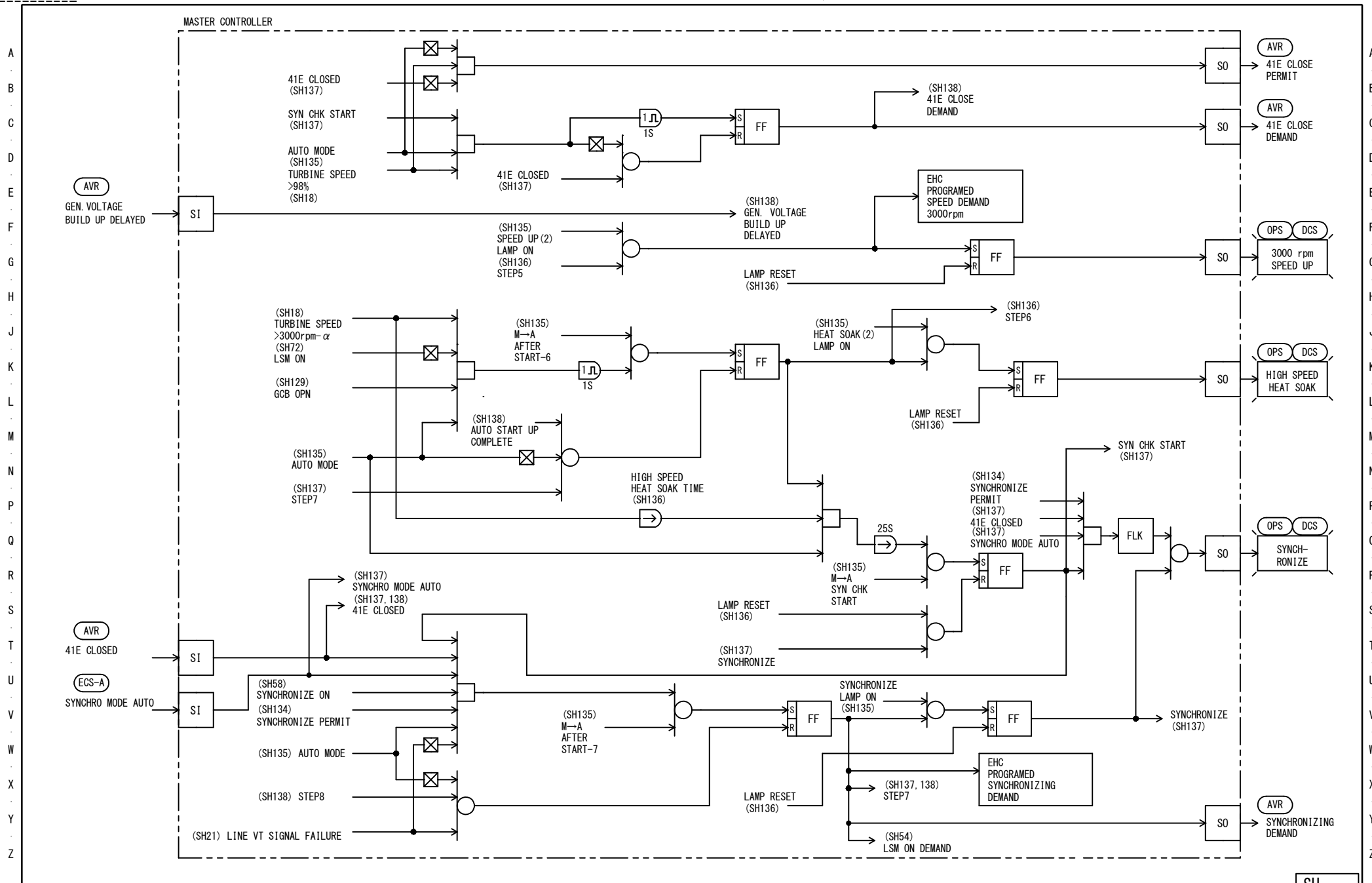
調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
R. F.
N. Y.
Jun. 25. 21

AUTOMATIC SPEED UP (2)

7K2K1689 - 136

SH



SH

REV. 2

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

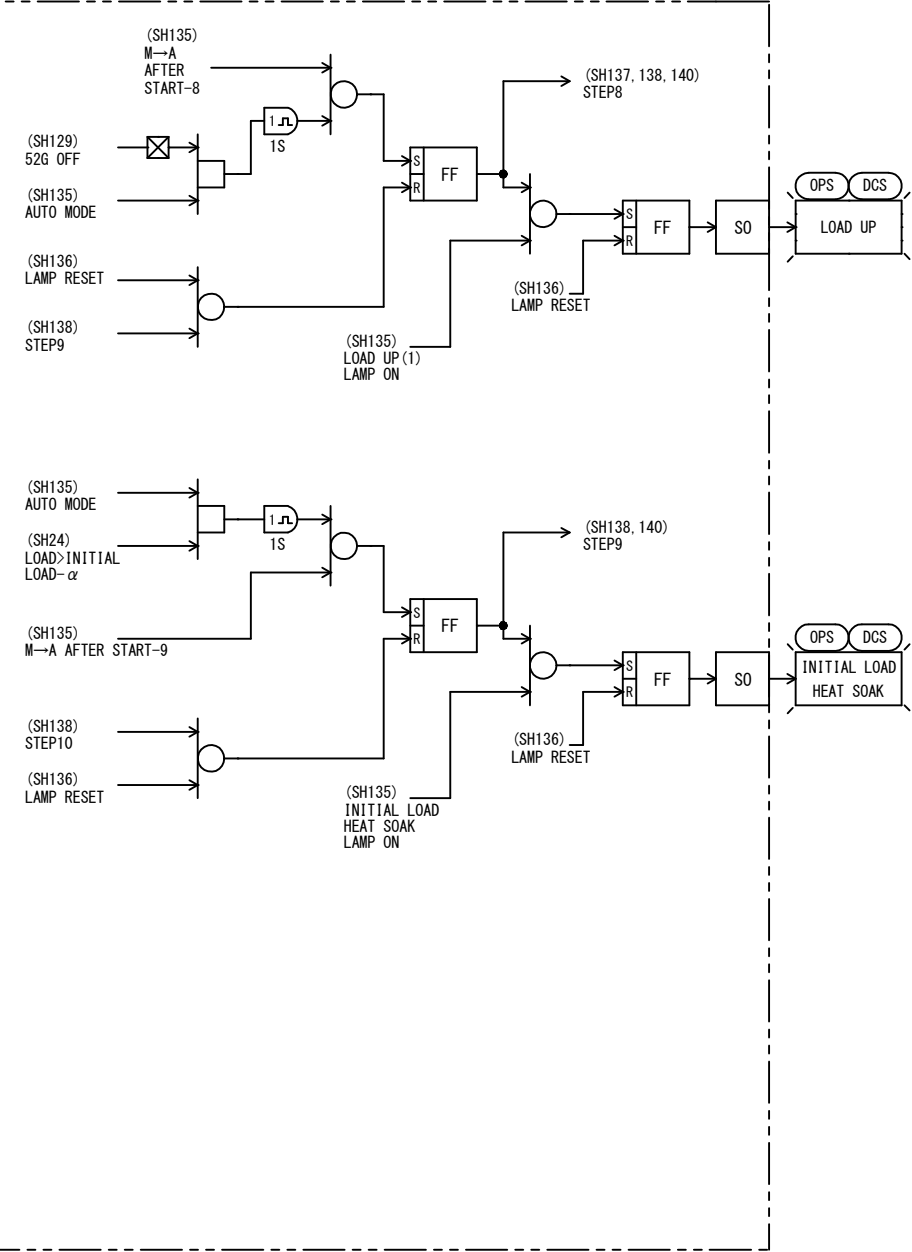
調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
R. F
N. Y
Jun. 25. 21

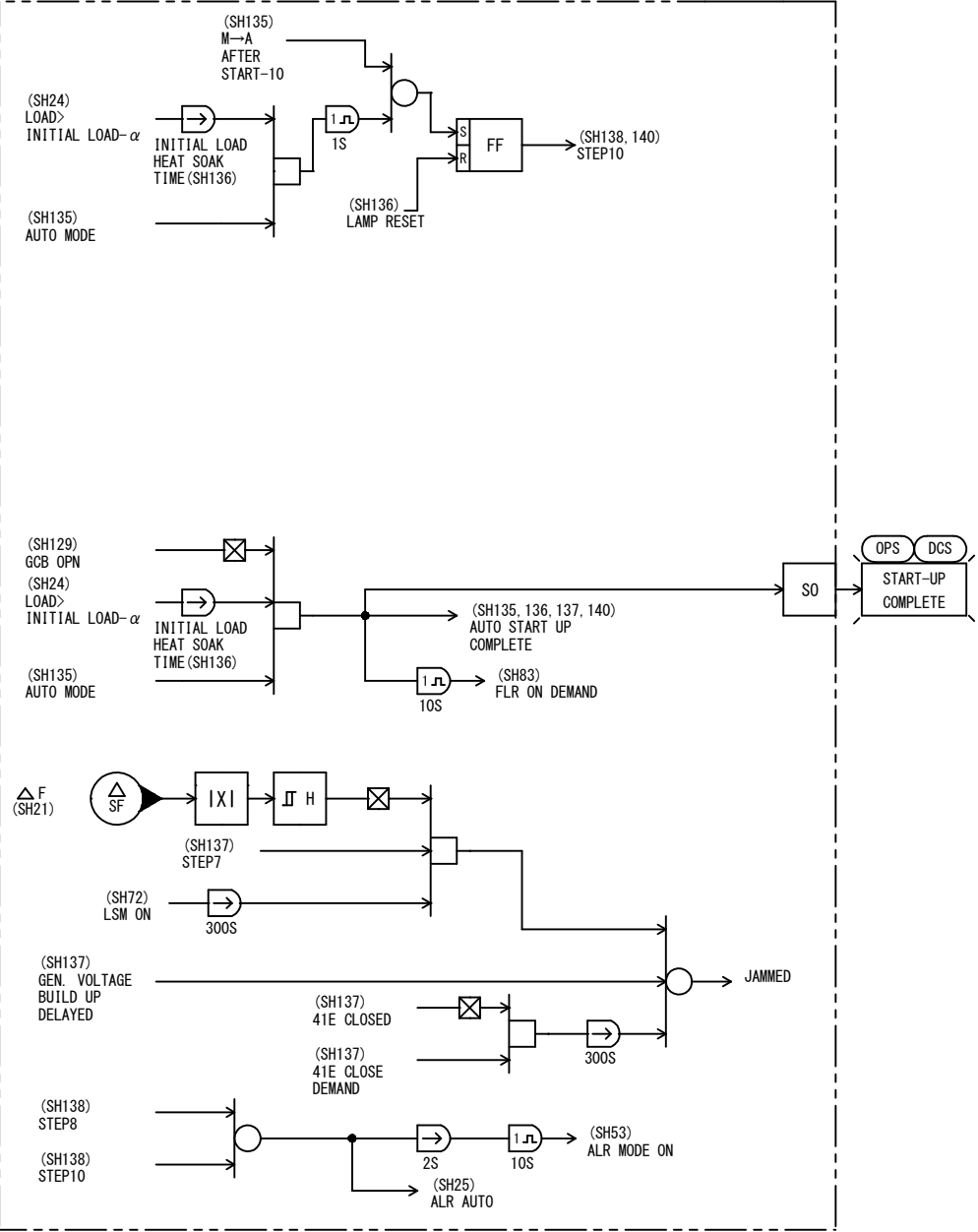
AUTOMATIC SYNCHRONIZE

7K2K1689 - 137

MASTER CONTROLLER



MASTER CONTROLLER



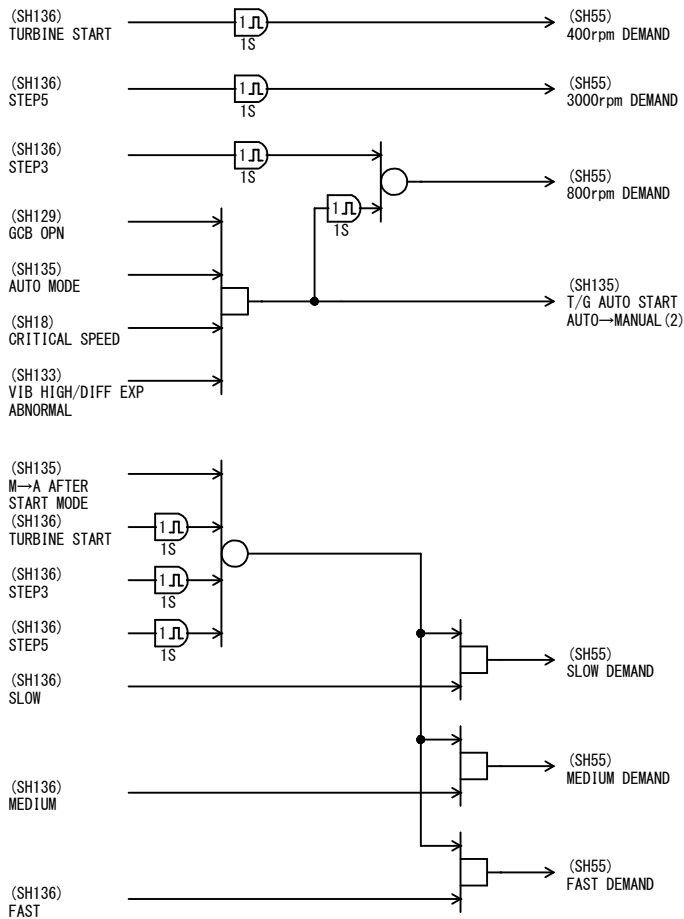
SH

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

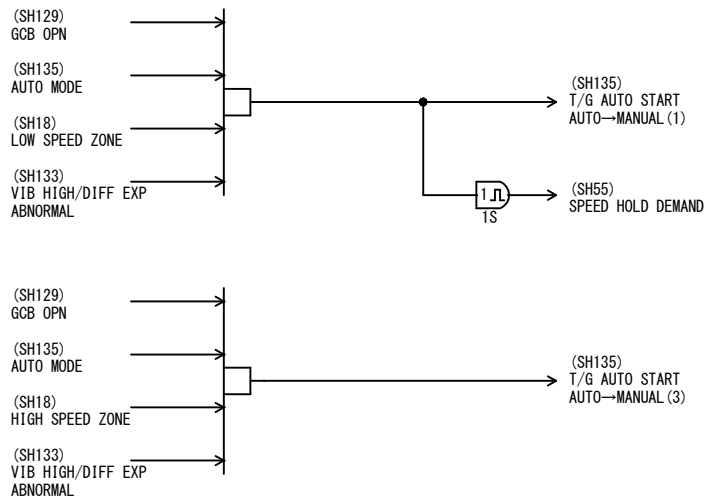
調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	AUTOMATIC LOAD-UP 7K2K1689 - 138
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MASTER CONTROLLER



MASTER CONTROLLER



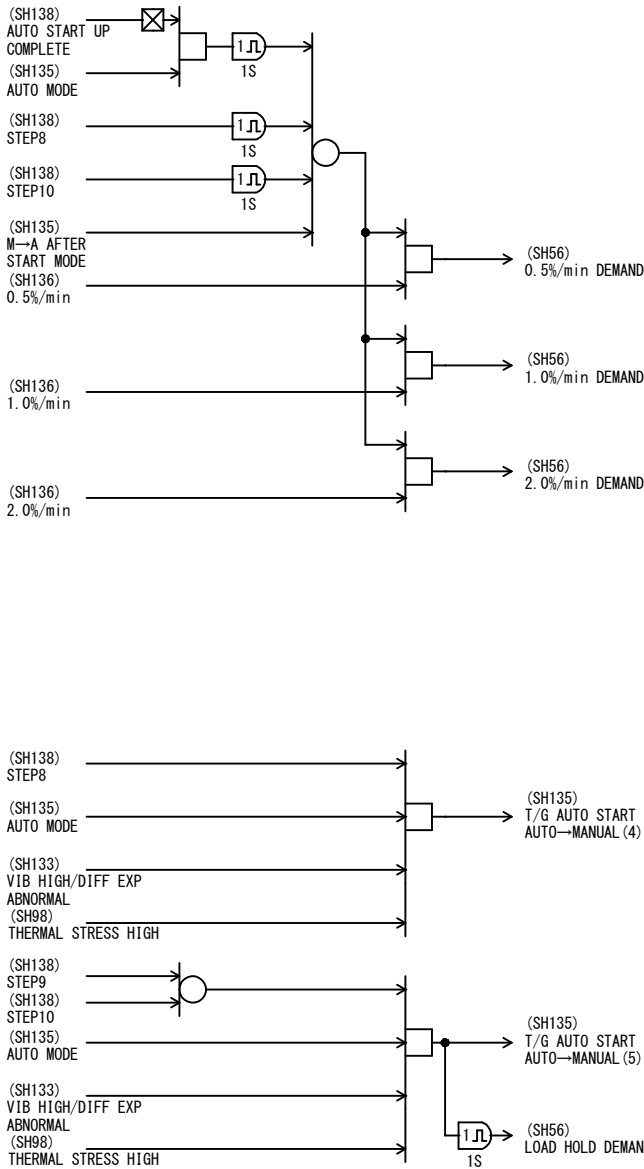
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○	REV. 2

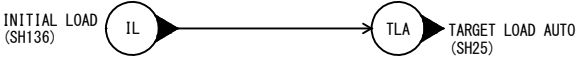
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調査 CHECKED BY T. S/K. T Jun. 25. 21	設計 DESIGNED BY ----/ R. F N. Y Jun. 25. 21	AUTOMATIC ACCELERATION DEMAND 7K2K1689 -139
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MASTER CONTROLLER



MASTER CONTROLLER



SH

	REV. 2

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

調査 CHECKED BY	設計 DESIGNED BY	AUTOMATIC LOAD-UP DEMAND
T. S/K. T	----/ R. F N. Y	
Jun. 25. 21	Jun. 25. 21	7K2K1689 -140



(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

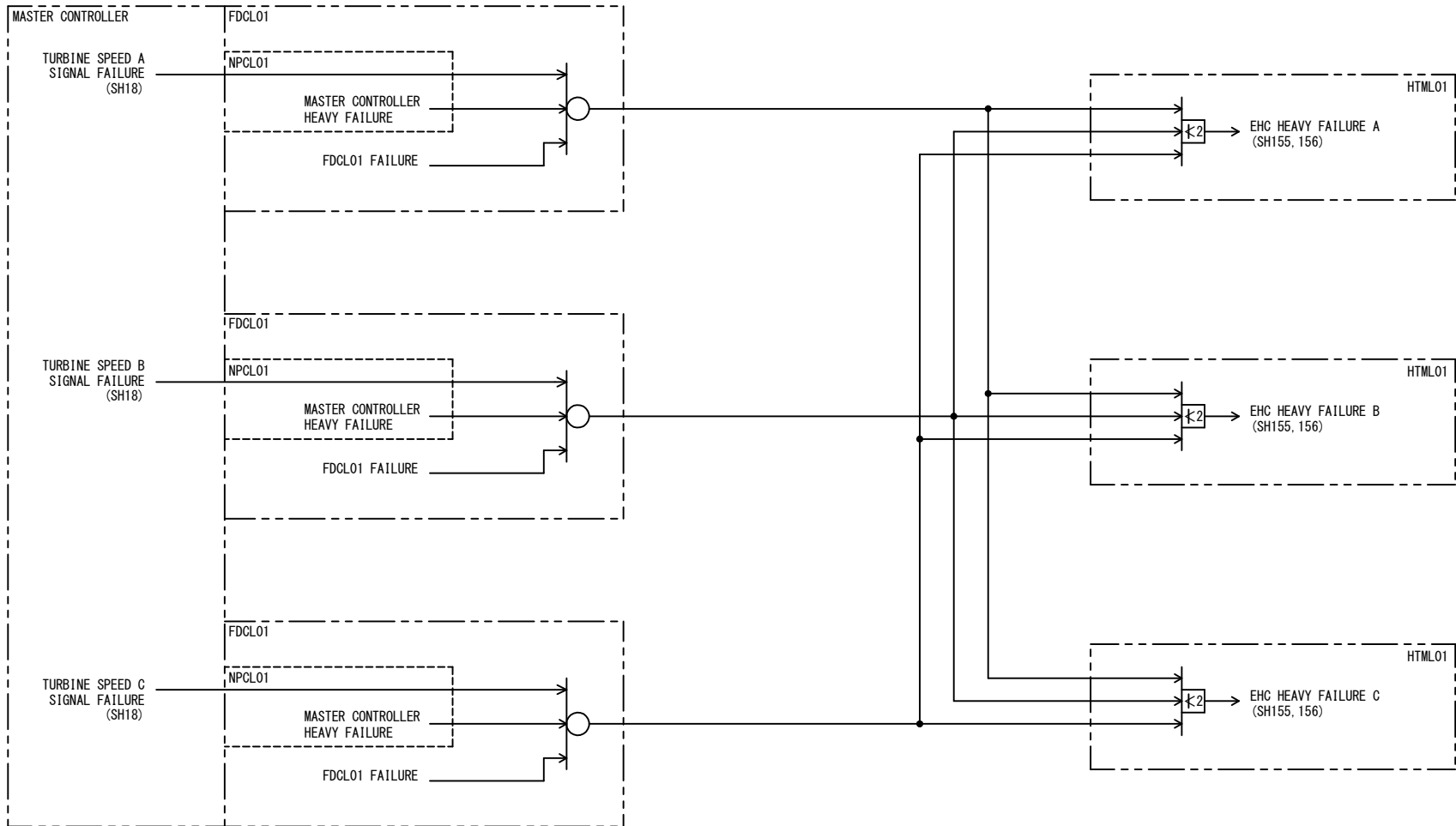
調査 CHECKED BY
T. S/K. T
Jun. 25. 21

設計 DESIGNED BY
——/ R. F
N. Y
Jun. 25. 21

TURBINE TRIP(1)

7K2K1689 -151

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TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION

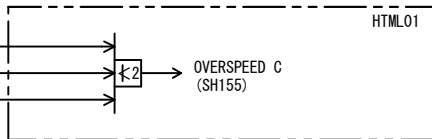
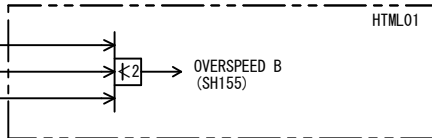
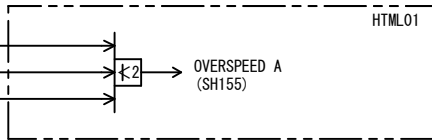
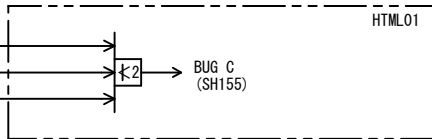
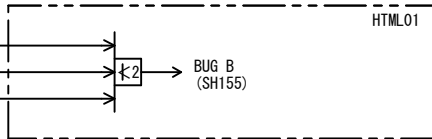
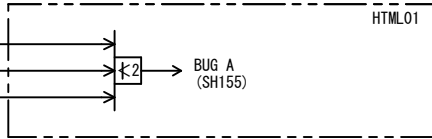
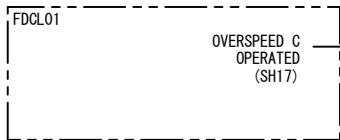
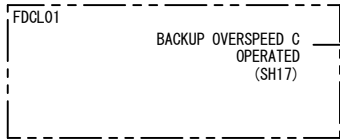
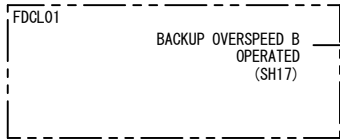
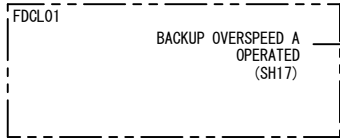
調査 CHECKED BY
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Jun. 25. 21

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—/ R. F
N. Y
Jun. 25. 21

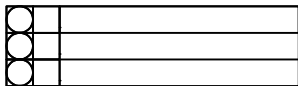
TURBINE TRIP (2)

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Jun. 25. 21

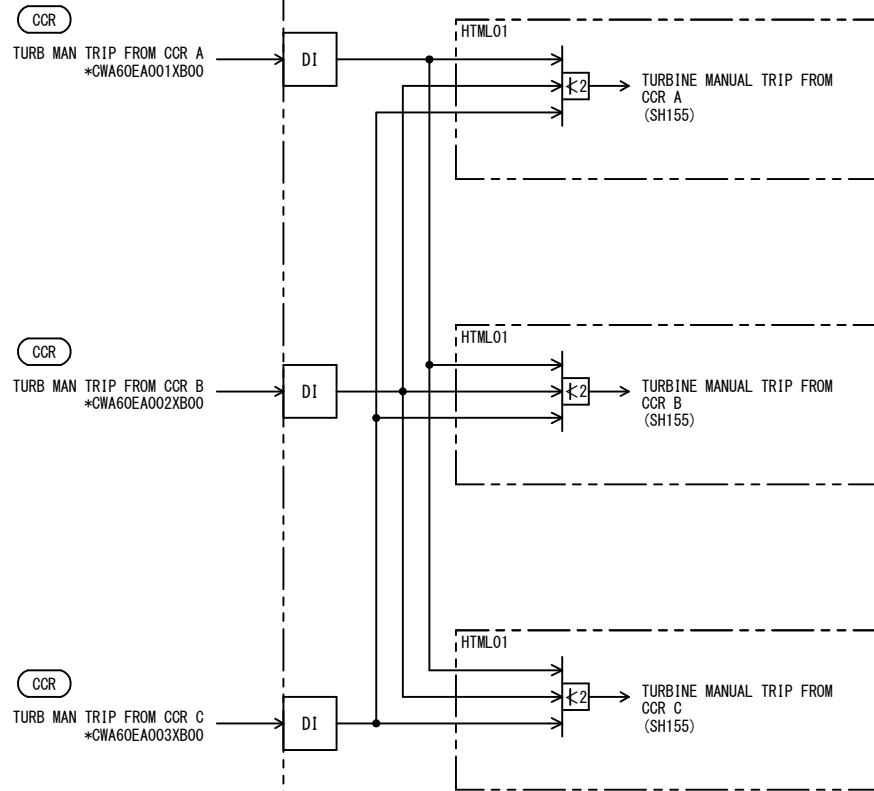
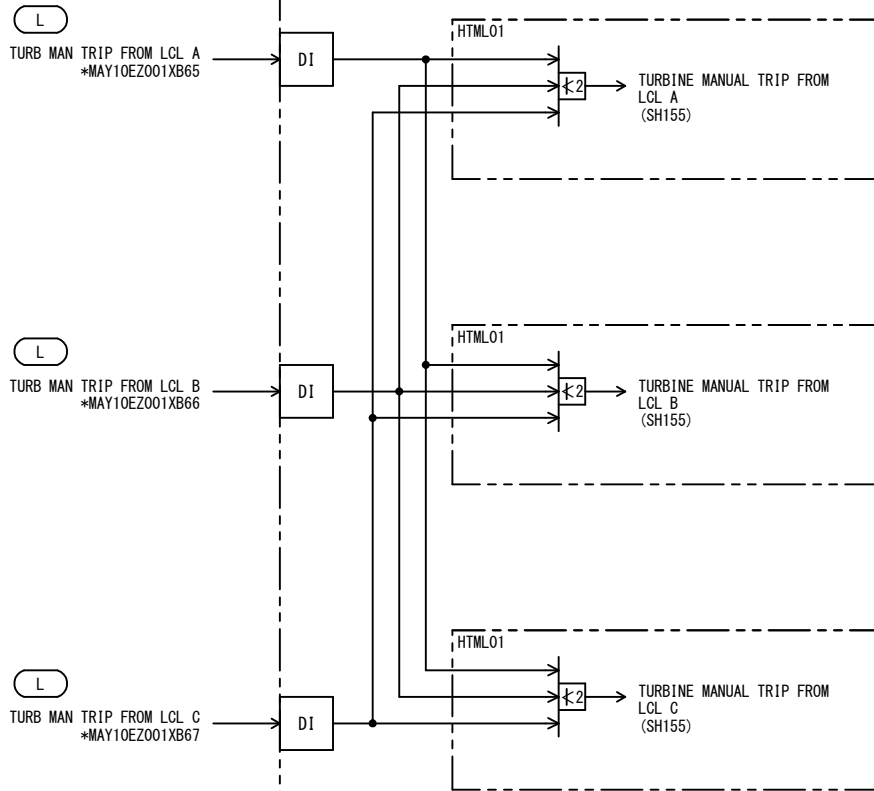
TURBINE TRIP(3)

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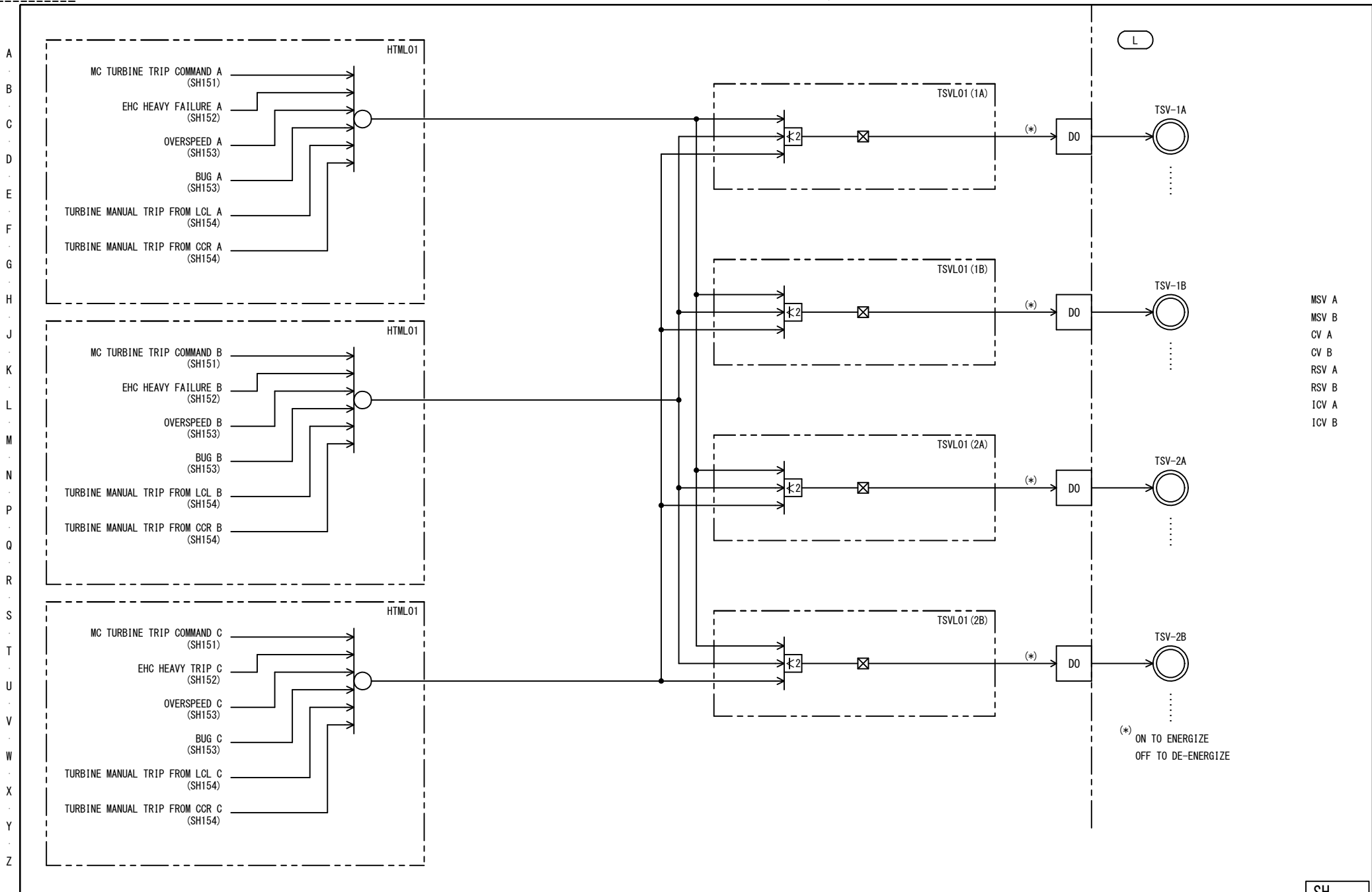


(*) NOTE
*: 10 (UNIT1)
: 20 (UNIT2)

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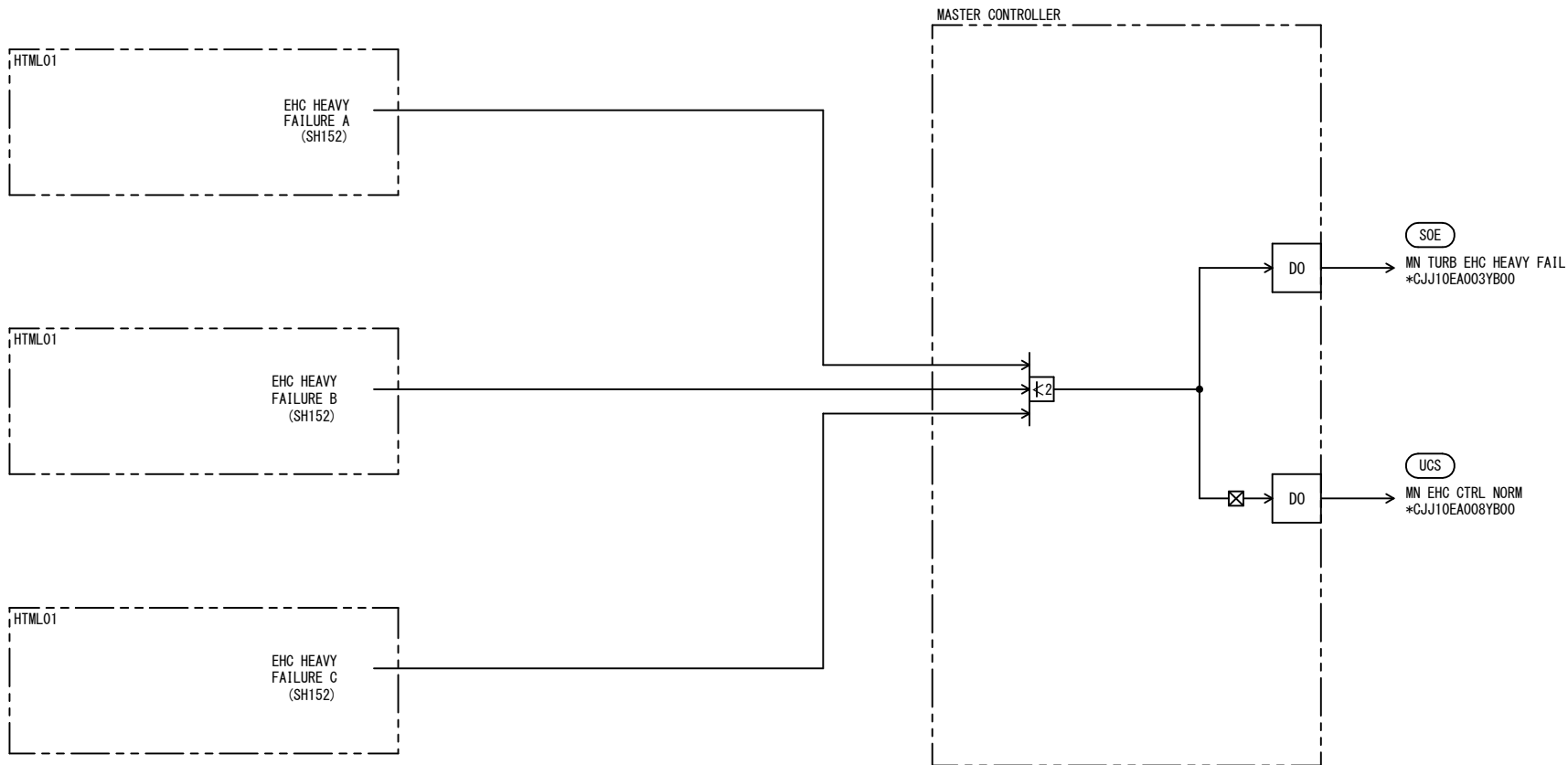
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(*)NOTE
*:10 (UNIT1)
:20 (UNIT2)

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	REV. 2

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Jun. 25. 21

REVISION LIST	
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SH

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①	—	THE FIRST ISSUE.			R. Fujiwara N. Yasuda	
① Jan. 31. 22	—	Chg. Descr. Refer to revision list.	H. Inada Jan. 31. 22	T. Saito Jan. 31. 22		
			K. Takahashi Jan. 31. 22	K. Takahashi Jan. 31. 22	R. Fujiwara Jan. 28. 22 N. Yasuda Jan. 27. 22	
② Jul. 10. 23	—	Chg. Descr. Refer to revision list.	K. Saito Jul. 10. 23	T. Saito Jul. 7. 23		
			<i>[Signature]</i> Jul. 7. 23	<i>[Signature]</i> Jul. 7. 23	<i>[Signature]</i> Jul. 7. 23	

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