

1. HSTD SHALL BE INSTALLED IN A FREE STANDING CABINET.
2. ALTERNATE CONTROL, CONTROL SELECTOR SWITCH IS PROVIDED FOR ALL BREAKERS IN ALL STATES. ROTATE AND LOCK CONTROL OF BREAKER IS AVAILABLE IN BOTH THE POSITION AND FULLY CONNECTED POSITION IN ACCORDANCE WITH THE REQUIREMENTS.
3. TO DRY DC SUPPLIES WILL BE PROVIDED AS EACH SWGR LINEUP FOR CONTROL POWER SUPPLY. AUTOMATIC CHANGE OVER WILL BE PROVIDED FOR SOURCE SELECTION.
4. ONE METERING AC SUPPLY WILL BE PROVIDED AT EACH SWGR LINEUP FOR PANEL AND MOTOR SMALL HEATER CIRCUIT.
5. DCS MONITORS HIGH SPEED AUTO TRANSFER DEVICE TESTED FROM ONE BREAKER TO THE OTHER. THE TESTING ARRANGEMENTS SHALL BE SUCH THAT BREAKER NOT IN SERVICE CONDITIONS. HSTD SHALL BE BLOCKED.
6. FOR A SIGNIFICANT CHANGE NOT OF PROCESS IS AN INTERNAL LOT 3 PROCESS AND THE ION NUMBER FOR THE ABOVE IS PROVIDED TO TRACE THE CHANGES IN THIS DOCUMENT AS CLOUD2 IN THIS DRAWING.

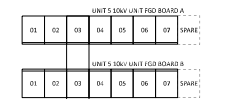
REFERENCE DRAWINGS

- TB56-L3-OFF-C-00-E-26-000
- OVERALL SINGLE LINE DIAGRAM FOR BOP
- TB56-L3-OFF-US-PR-1-D01-000
- ONE LINE DIAGRAM - 30KV SWITCHGEAR UNIT 5 FGD B
- TB56-L3-OFF-US-PR-1-D01-000
- ONE LINE DIAGRAM - 30KV SW. TRANSFER UNIT 5 FGD S/A
- TB56-L3-OFF-US-PR-1-D01-000
- ONE LINE DIAGRAM - 30KV SW. TRANSFER UNIT 5 FGD S/B

LEGEND

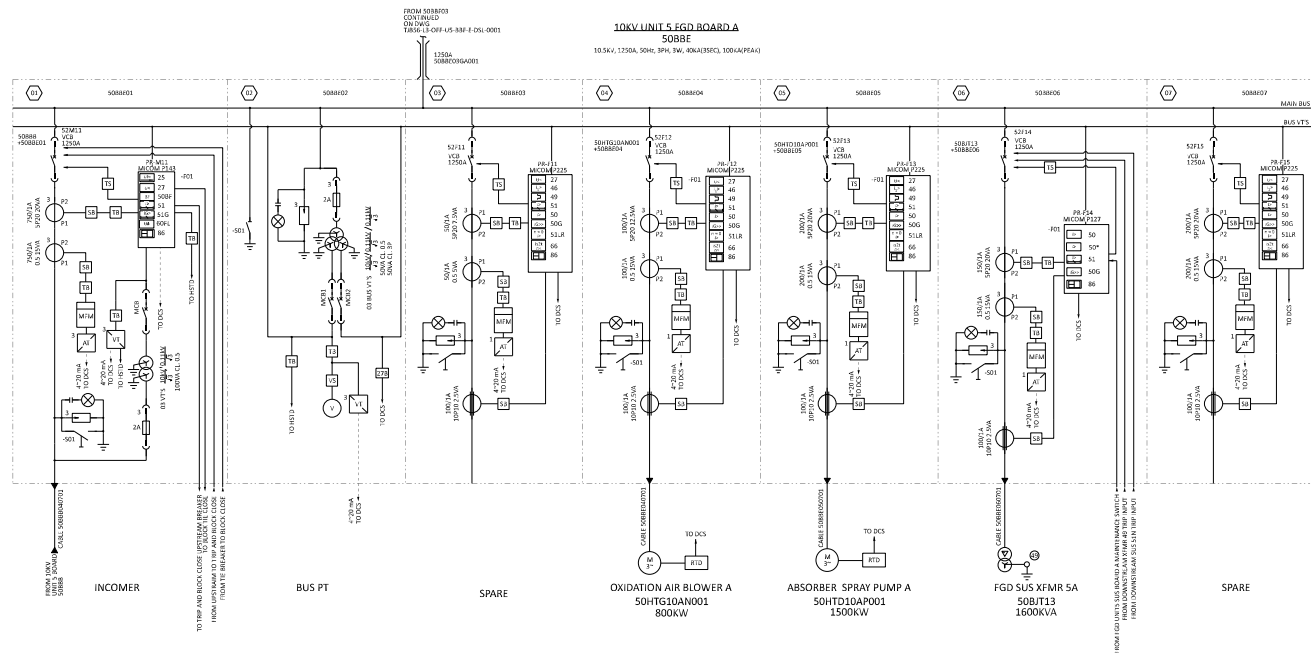
- 25 [Symbol] SYNCHRONIZING OR SYNCHRONISM CHECK RELAY
- 27 [Symbol] LINE UNDERVOLTAGE RELAY
- 40 [Symbol] REVERSE-POWER OR TRANS-ANALOG CURRENT RELAY
- 42 [Symbol] MACHINE OR TRANSFORMER THERMAL RELAY
- 50 [Symbol] INSTANTANEOUS OVERCURRENT RELAY
- 50A [Symbol] OVERCURRENT RELAY
- 50H [Symbol] INSTANTANEOUS OVERCURRENT RELAY (BREAKER FAILURE)
- 50S [Symbol] GROUND INSTANTANEOUS OVERCURRENT RELAY
- 53 [Symbol] AC INVERSE TIME OVERCURRENT RELAY
- 54G [Symbol] GROUND INVERSE TIME OVERCURRENT RELAY
- 51LP [Symbol] STALLING PROTECTION (LOCKED ROTOR DETECTION PROTECTION)
- 600 [Symbol] FUSE LOSS
- 66 [Symbol] HOURMETER FOR STARTS PER HOUR
- 88 [Symbol] LOCKOUT RELAY
- HSTD [Symbol] HIGH SPEED AUTO TRANSFER DEVICE
- AP [Symbol] APPARATUS THERMAL DEVICE
- UL [Symbol] BUS UNDERVOLTAGE RELAY; CONTACT CHANGE WHEN BUS VOLTAGE LEAVES TRANS SETTING VALUE
- PTD [Symbol] RESONANCE TEMP. DETECTOR
- CT [Symbol] CURRENT TRANSFORMER SHORTING TYPE TERMINAL BLOCK
- TB [Symbol] TEST BLOCK
- TS [Symbol] TEST SWITCH
- VS [Symbol] VOLT/METER SELECTOR SWITCH
- VI [Symbol] VOLTAGE TRANSDUCER
- AI [Symbol] CURRENT TRANSDUCER
- MTU [Symbol] MULTIFUNCTION METER
- [Symbol] CORE BALANCE CURRENT TRANSFORMER

RELAY ARRANGEMENT



TRIP TABLE :

PROTECTIVE DEVICE	LOCATION	TRIP	BLOCK CLOSE	ALARM	REMARK
PR-M11 (MCOM P143)	50BE01	S2M11 UPSTREAM BREAKER	S2M11 UPSTREAM BREAKER	DCS	
PR-F11 (MCOM P225)	50BE03	S2F11	S2F11	DCS	SPARE
PR-F12 (MCOM P225)	50BE04	S2F12	S2F12	DCS	
PR-F13 (MCOM P225)	50BE05	S2F13	S2F13	DCS	
PR-F14 (MCOM P127)	50BE06	S2F14	S2F14	DCS	
PR-F15 (MCOM P225)	50BE07	S2F15	S2F15	DCS	SPARE



ISSUED FOR AS-BUILT

THE DISTRIBUTION AND USE OF THE AS-BUILT FORMS CAN BE FULLY TRACED TO THE USER SHALL FULLY TRACABILITY OF THIS DRAWING TO THE AS-BUILT CONTROLLED VERSION.

2	07/19/22	ISSUED FOR AS-BUILT	CV	CY	HO	HO	21
1	16/AUG/18	REVISED AS PER ION 14-E-0071	CV	CY	HO	HO	21
0	26/AUG/18	ISSUED FOR CONSTRUCTION	21	21	HO	HO	21

NO [Date] / [Month] / [Year] REVISIONS AND RECORD OF ISSUE BY [Signature]

OWNER: PT. Bina Jati Power

PROJECT TITLE: TRANSFER UNIT 5 SWITCHGEAR (SABER-0) COAL FIRED STEAM POWER PLANT 2 x 1000 MW

ENGINEER: POYRY





















EPC CONTRACTORS: Sumitomo Corporation, PT. Wasita Mitra Engineering, AvestPower Japan Ltd.

PROJECT DRAWING NO. TUB56-L3-OFF-US-BBE-E-DSL-0001 REV. 2

ONE-LINE DIAGRAM - 10KV SWITCHGEAR UNIT 5 FGD A

UNITS	VER

APPROVED:	ZIA	BY:	ZIA
DATE:	16/AUG/18	DATE:	16/AUG/18
EPC USER SUB-CONTRACTOR:	BLACK & VEATCH	EPC USER SUB-CONTRACTOR DRAWING NO.:	179956-SBBA-E1101
		SHEET NO. 1 OF 1	REV. 2

Item No.	Equipment Tag Number (KKS)										Spec No.	Equipment Name	Description of Spare Items	Manufacturer's Part Identification	Qty per two Units		Sketch	Cross Reference Drawing	Frequency of replacement	Remarks			
	Level 0 (Total Plant)	Level 1 (System Code)			Level 2 (Equipment Code)			Level 3 (Component Code)							Qty	(nr., pcs, set, etc)				(See Item 2.11 of Instrm Sht)	(See Item 2.12 of Instrm Sht)	Item No. of CDA	Qty difference from Qty of CDA
	G	F ₀	F ₁ ,F ₂ ,F ₃	F _N	A ₁ A ₂	A _N	A ₃	B ₁ B ₂	B _N														
510	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Hoisting Brake Disc		1	pcs	TBD	TBD	3 years	B3-9-SP-93				
511	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Hoisting Brake Wheel		1	pcs	TBD	TBD	3 years	B3-9-SP-94				
512	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Hoisting Rectifier		1	pcs	TBD	TBD	3 years	B3-9-SP-95				
513	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Wire Rope Set		2	pcs	TBD	TBD	3 years	B3-9-SP-98				
514	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		No Fuse Breaker (Hoist & T/S)		2	pcs	TBD	TBD	3 years	New Item				
515	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Magnet Contactor		3	pcs	TBD	TBD	3 years	New Item				
516	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Silicon Rectifier		1	pcs	TBD	TBD	3 years	New Item				
517	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Bearing Set		1	pcs	TBD	TBD	3 years	B3-9-SP-108				
518	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Push Button		1	pcs	TBD	TBD	3 years	B3-9-SP-109				
519	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Hook Safety Latch		2	pcs			3 years	B3-9-SP-110				
520	0	0	SMB	01	AE	016	TBD	TBD	TBD	67,1000		Chain Sprocket for 4 manual hoists		8	pcs			3 years	New Item				
521	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Electrical Hoists (5 hoists)				TBD	TBD						
522	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Hoisting Brake Disc		5	pcs		TBD	3 years	New Item				
523	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Hoisting Brake Wheel		5	pcs	TBD	TBD	3 years	New Item				
524	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Hoisting Rectifier		5	pcs	TBD	TBD	3 years	New Item				
525	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Wire Rope Set		10	pcs	TBD	TBD	3 years	New Item				
526	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		No Fuse Breaker (Hoist & T/S)		10	pcs	TBD	TBD	3 years	New Item				
527	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Magnet Contactor		30	pcs	TBD	TBD	3 years	New Item				
528	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Silicon Rectifier		5	pcs	TBD	TBD	3 years	New Item				
529	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Push Button		5	pcs	TBD	TBD	3 years	New Item				
530	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Bearing Set		5	pcs	TBD	TBD	3 years	New Item				
531	0	0	SMB	01	AE	019	TBD	TBD	TBD	67,1000		Hook Safety Latch		10	pcs			3 years	New Item				
532												Laboratory											
533												Workshop Equipment (Onshore)											
534												Electrical System (Medium voltage switchgear 10kV, 3kV)											
535																							
537	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Closing coil AGSH33020-01		5	pcs			upon damage	B3-13-SP-1	2-5			
538	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Tripping coil AGSH33020-01		5	pcs			upon damage	B3-13-SP-2	2-5			
539	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		PT Fuse-		12	pcs			upon damage	B3-13-SP-3	3-12			
540	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Hand crank for inserting circuit breakers CHD800092R0162		5	pcs			upon damage	New Item				
541	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Spring charged lever AGSH30498-01		5	pcs			upon damage	New Item				
542	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Emergency Tripping Rod AGSH35446-01		5	pcs			upon damage	New Item				
543	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Hand lever for earthing switchCHD100063P0005		5	pcs			upon damage	New Item				
544	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Key for cubicle door CHD1000082P0003		5	pcs			upon damage	New Item				
545	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Double-bit key CHD1000082P0002		5	pcs			upon damage	New Item				
546	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		DC AND UPS SYSTEM						upon damage					
547	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	63,3601		Battery cells per each type (Enersys, 2V/200AH)		2	pcs		TJB56-L3-OFF-C-BUC-E-D-CD-0001-0006	upon damage	New Item				