

Amendment No.-III to the Bidding Documents for AIS Bay extension works (SS-02)

i) Under NERES-XXIII

a) Extension of 132kV Pasighat (DoP, Arunachal Pradesh) S/s.

b) Extension 132kV Roing (POWERGRID) S/s.

c) Extension 132kV Tezu (POWERGRID) S/s.

d) Extension of 132kV Namsai (POWERGRID) S/s

ii) Under NERES-29A

a) Installation of new 1x50MVA, 132/33kV (3rd) ICT at Namsai (POWERGRID) S/s

(Specification No. NER/NT/W-AIS/DOM/H00/25/08534)

S No.	Volume/ Section/ Clause No.	Existing Provision/ Bidder's Queries	Amended as/ POWERGRID's Reply
1	Volume II- Technical Specification	Bidder's Queries i) As per the attached pdf attached herein	Clarifications/Amended as New Documents: i) As per the attached pdf attached herein

Pre-Bid Queries and the Requirements		POWERGRID reply
SUPPLY PORTION NANSAL POWER GRID SUBSTATION		
1	Present Actual Architecture along with complete device protocol types	SAS architecture attached as Annexure-A
2	Existing all devices (All relay, SCU, Channel switch, Spare port availability details, GPS details,....etc) Model No along with software version.	SCU model no provided in SCU model sheet
3	All PC's OS details, RAM details, Port details, Spare port availability details.	This shall be part of detailed engineering
4	Existing all SAS related documents and backup are required. (SCD Database & PACIS Database or SCOSU Database and its version)	This shall be part of detailed engineering
5	Note: Assumed as all the spare ports are healthy.	OK
6	Control Room Blue Print required with complete dimensions to locate our panel.	This shall be part of detailed engineering
7	Existing Board formation	This shall be part of detailed engineering
8	Existing SLD	This shall be part of detailed engineering
9	Existing bays scheme drawing	This shall be part of detailed engineering
10	Installing there is no Busbar protection system at site. Please confirm, do we need to supply Busbar protection panels for Existing bays including extension bays (2 nos of Extension bays).	Yes bus bar protection includes both present and existing scope.
11	SBIL scope is limited to Configuration, Testing & Commissioning of Schneider supplied materials.	NA to EPC contractor. EPC to execute as per TS and scope
SUPPLY PORTION TEZU POWER GRID SUBSTATION		
1	Present Actual Architecture along with complete device protocol types	SAS architecture attached as Annexure-C
2	Existing all devices (All relay, SCU, Channel switch, Spare port availability details, GPS details,....etc) Model No along with software version.	SCU model no provided in SCU model sheet
3	All PC's OS details, RAM details, Port details, Spare port availability details.	This shall be part of detailed engineering
4	Existing all SAS related documents and backup are required. (SCD Database & PACIS Database or SCOSU Database and its version)	This shall be part of detailed engineering
5	Note: Assumed as all the spare ports are healthy.	OK
6	Control Room Blue Print required with complete dimensions to locate our panel.	This shall be part of detailed engineering
7	Existing Board formation	Attached
8	Existing SLD	Already provided with Tender
9	Existing bays scheme drawing	This shall be part of detailed engineering
10	Installing there is no Busbar protection system at site. Please confirm, do we need to supply Busbar protection panels for Existing bays including extension bays (2 nos of Extension bays).	This has been aptly provided in section on project. Pl refer cl.
11	SBIL scope is limited to Configuration, Testing & Commissioning of Schneider supplied materials.	NA to EPC contractor. EPC to execute as per TS and scope
SUPPLY PORTION ROMING POWER GRID SUBSTATION		
1	Present Actual Architecture along with complete device protocol types	SAS architecture attached as Annexure-B
2	Existing all devices (All relay, SCU, Channel switch, Spare port availability details, GPS details,....etc) Model No along with software version.	SCU model no provided in SCU model sheet
3	All PC's OS details, RAM details, Port details, Spare port availability details.	This shall be part of detailed engineering
4	Existing all SAS related documents and backup are required. (SCD Database & PACIS Database or SCOSU Database and its version)	This shall be part of detailed engineering
5	Note: Assumed as all the spare ports are healthy.	OK
6	Control Room Blue Print required with complete dimensions to locate our panel.	This shall be part of detailed engineering
7	Existing Board formation	This shall be part of detailed engineering
8	Existing SLD	Already provided with Tender
9	Existing bays scheme drawing	This shall be part of detailed engineering
10	Dismantling of existing all Busbar relays (both PU & CU) by our new relays is not in SBIL scope. All wirings are also not in SBIL scope. SBIL scope is to supply the relays as loose material and further testing & commissioning the same after successfully retrofitting by customer.	NA to EPC contractor. EPC to execute as per TS and scope
11	SBIL scope is limited to Configuration, Testing & Commissioning of Schneider supplied materials.	NA to EPC contractor. EPC to execute as per TS and scope
SUPPLY PORTION PASIGHAT POWER GRID SUBSTATION		
1	Control Room Blue Print required with complete dimensions to locate our panel.	This shall be part of detailed engineering
2	Existing Board formation	This shall be part of detailed engineering
3	Existing SLD	Already provided with tender
4	Existing bays scheme drawing	This shall be part of detailed engineering
5	SBIL scope is limited to Configuration, Testing & Commissioning of Schneider supplied materials.	NA to EPC contractor. EPC to execute as per TS and scope

	BCU Model
Tezu	C264M11I6910012304000031111N00
Roing	C264M11I6910012304000031111N00
Namsai	C264U11I6A100160330000U1111N10

संदर्भ/Ref : CC-ENGG-TB202215-1001828-SS1718-SAS-SCH

Date : 16/07/2024

From : Sumit Mishra
DGM

To : TRANSRAIL LIGHTING LIMITED
A-201/209 BOOMERANG COMPLEX MUMBAI
400072
400072

Cc : NA

Subject : Substation Package SS-01 for (i) Extn. of 400kV AIS switchyard and Creation of 220kV GIS at 400/132kV Banka (POWERGRID) S/s under ERSS-XXV (ii) Extn. of 132kV AIS switchyard and Upgradation of existing 132kV Namsai (POWERGRID) S/s to 220kV (with 220kV side as GIS) including 1x50MVAR, 245kV Bus Reactor under NERSS-XV and (iii) 2 nos. of 220kV GIS line bays at Kathalguri (NEEPCO) switchyard under NERSS-XV through Tariff Based Competitive Bidding (TBCB) route.

LOA Ref : TBCB/ERSS-XXV & NERSS-XV/220KV GIS/G7/NOA-1/03 & NOA-II/04 Dated 12/10/2022

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : G508-TLL-NAM-VEN-SAS-SCH
Orgn. Drg. No. : TB202215-1001828-SS1718-SAS-SCH
Revision No. : 02
Drg. Title : Namsai- SAS Panel Scheme
App. Category : CAT-I
Release Date : 16/07/2024


Scan to verify

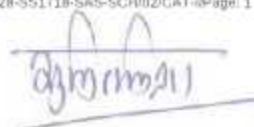
Comments : Document in order.

अनुमोदित श्रेणी/App. Category:

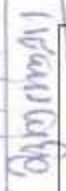
- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रियाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचना एवं रिकार्ड हेतु।
For information and record.
- CATREL/ निर्माण हेतु जारी।
REL-CON **Released for construction.**

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.



2	Revised as per PGCIL comments dated 03.12.2023	04.06.2024	MSB	MSB	SSC
1	Revised as per PGCIL comments dated 03.12.2023	01.02.2024	MSB	MSB	SSC
0	First Submission	31.10.2023	MSB	MSB	SSC
REV	DESCRIPTION	DATE	DESIGN	CHECK	APPROVE
COMPANY	NR NER TRANSMISSION LIMITED				
CONSULTANT :	 				
CONTRACTOR :					
PROJECT :	SUBSTATION PACKAGE SS01 FOR (I) EXTN. OF 400KV AIS SWITCHYARD AND CREATION OF 220KV GIS AT 400/132KV BANKA (POWERGRID) UNDER ERSS-XXV, (II) EXTN. OF 132KV AIS SWITCHYARD AND UPGRADATION OF EXISTING 132KV NAMSAI (POWERGRID) S/S TO 220KV GIS INCLUDING 1X50MVAR, 245KV BUS REACTOR UNDER NERSS-XV AND (III) 2 NOS. OF 220KV GIS LINE BAYS AT KATHALGURI (NEEPCO) SWITCHYARD UNDER NERSS-XV.				
LOA NO :	TBCB/ERSS-XXV & NERSS-XV/220KV GIS/G7/NOA-I/03 DTD.12.10.2022 TBCB/ERSS-XXV & NERSS-XV/220KV GIS/G7/NOA-II/04 DTD.12.10.2022				
TITLE :	NAMSAI SUBSTATION AUTOMATION SYSTEM INTEGRATION				
STATUS :	For Informarion ☐	For Approval ☒	For Execution ☐	As Built ☐	
DOCUMENT NUMBER	TLL DOCUMENT NUMBER : G508-TLL-NAM-VEN-SAS-SCH				REV. 2
	PGCIL DOCUMENT NUMBER : TB202215-1001828-SS1718-SAS-SCH				



Compliance Report

Customer	PGCIL		
Project	EXTENSION OF 132KV AND UPGRADEATION TO 220KV AT NAMSAL SS		
Po.No.	2120004146		
Comments Reference:	TB202215-1001828-SSI1718-SAS-SCH_1		
Compliance Reference:	11-226017525-DCS-Comp-01		
Comment.No	CUSTOMER COMMENTS	Drawing Sheet No	Compliance
1	1. Table for BOQ to be shown in this drg. 2. Present scope of SAS Aug shall be marked. 3. for EFS- existing used for present bays & new used for present scope, following details shall be provided in table format: a) total no of Fibre & RJ45 ports b) port Used for present scope c) spare available for future use.	Sht No.005	1. Noted, the same has been Updated. 2. Present scope of SAS supply are marked with BLUE colored boundaries.. 3. Existing EFS Ports are not utilized for the present scope of supply. Existing EFS port details are aded in table form. The EFS port details markup shall be provided during site commissioning, ASBUILT drawing of the same will be provided.
2	P546 & other relays to be included as per CRP scheme	Sht No.005	Noted, the same has been Updated.

LIST OF DOCUMENTS

DRAWING	DESCRIPTION.	REVISION	DATE	ISSUE
25-4-002	ARCHITECTURE DRAWING	C	22-05-2024	FOR APPROVAL

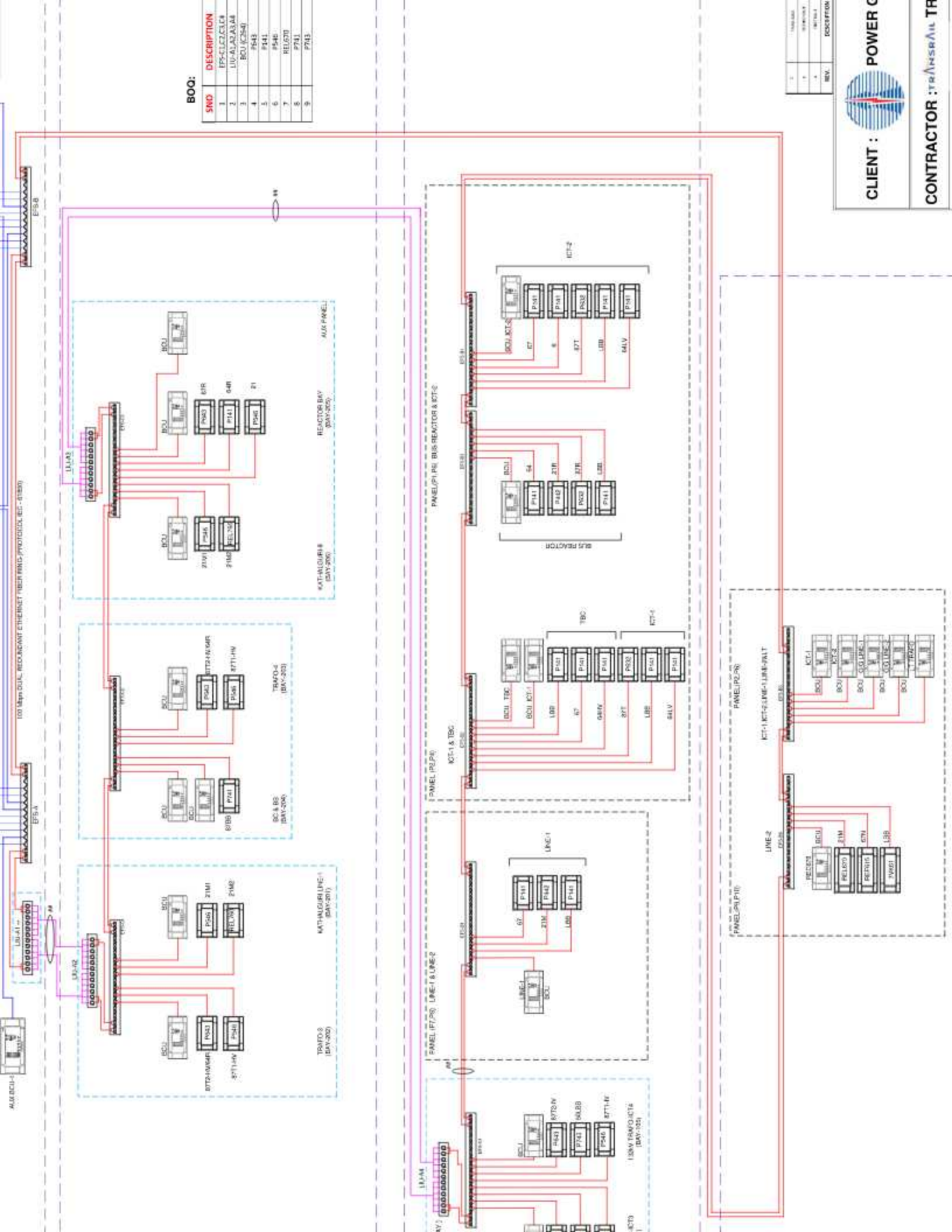
PANEL TYPES :



POWER GRID CORPORATION OF INDIA



TRANSRAIL LIGHTING LTD.



BOM:

SNO	DESCRIPTION
1	IP5-CL-CL-CL-CL
2	IP5-CL-CL-CL-CL
3	IP5-CL-CL-CL-CL
4	IP5-CL-CL-CL-CL
5	IP5-CL-CL-CL-CL
6	IP5-CL-CL-CL-CL
7	IP5-CL-CL-CL-CL
8	IP5-CL-CL-CL-CL
9	IP5-CL-CL-CL-CL

REV.	DESCRIPTION
1	1000-0000
2	1000-0000
3	1000-0000
4	1000-0000



CLIENT :

POWER C

CONTRACTOR : TR/NSR/IL TR

EXISTING 132kV & 33kV BAYS EFS DETAILS

EXISTING 132kV & 33kV BAYS EFS DETAILS										
SR.	LOCATION/PANEL	EFS NAME	TOTAL NO OF PORTS		TYPE OF PORTS		USED PORTS		SPARE PORTS	
			FX (FIBRE)	TX/RJ45 (COPPER)	FX (FIBRE)	TX/RJ45 (COPPER)	FX (FIBRE)	TX/RJ45 (COPPER)	FX (FIBRE)	TX/RJ45 (COPPER)
1	TEZU LINE BREAKER PANEL(P7B)	HIRCHMANN	32	1	Multimode	RJ45	16	0	16	1
2	ICT-2 PROTECTION PANEL(P6A)	HIRCHMANN	32	1			18	0	14	1
3	ICT-1 PROTECTION PANEL(P2A)	HIRCHMANN	32	1			14	0	18	1
4	BUS REACTOR BREAKER PANEL(P1B)	HIRCHMANN	32	1			32	0	0	1
6	NETWORKING PANEL-1	HIRCHMANN	8	13	8		9	0	4	
7	NETWORKING PANEL-2	HIRCHMANN	8	13	8		8	0	5	
8	33 KV BCU PANEL	HIRCHMANN	32	1	22		0	10	1	



Signature

B	FA	KM	DG	PJ	FOR APPROVAL	
		12-01-2024	12-01-2024	12-01-2024		
A	FA	KM	DG	PJ	FIRST SUBMISSION	
		13-10-2023	13-10-2023	13-10-2023		
REVISION	ISSUE STATUS	PREPARED BY	CHECKED BY	APPROVED BY	MODIFICATIONS	RETURN STATUS
		DATE	DATE	DATE		

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CUSTOMER:



POWERGRID CORPORATION OF INDIA LIMITED

CONTRACTOR:



TRANSRAIL LIGHTING LIMITED, INDIA

PROJECT:

EXTN. OF 132kV AIS & UPGRADATION TO 220kV GIS AT NAMSAI (POWERGRID) S/S

PO NUMBER:

2120004146/17.08.2023

CURRENT REVISION	NAME	DATE	SIGN.	DOCUMENT TITLE: GUARANTEED TECHNICAL PARTICULARS			
PREPARED	KM	12-01-2024					
CHECKED	DG	12-01-2024					
APPROVED	PJ	12-01-2024					
				DRAWING REFERENCE 11-226017525-4-004	REV B	SHEET 1	QTYSH 9

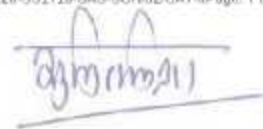


TABLE OF CONTENTS

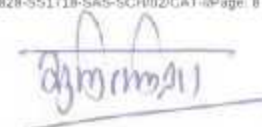
S.NO	CONTENTS	PAGE NO.
1	TECHNICAL SPECIFICATION OF BCU	3
2	TECHNICAL SPECIFICATION OF ETHERNET FIBER SWITCH	5
3	TECHNICAL SPECIFICATION OF FIBER OPTIC CABLE	6
4	TECHNICAL SPECIFICATION OF LIU	8

Issue: B

Drawing Reference: I1-226017525-4-004

Page 2 / 8

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TECHNICAL SPECIFICATION OF BCU

PARAMETERS	TECHNICAL DATA
Make	Schneider Electric
Model	C264
Case	80TE
Communication protocols supported	IEC61850 and all other IEC Protocol like IEC-60870-101, IEC-60870-103, IEC-60870-104, Modbus, DNP3
Hardware version	V6
IO Configuration per BCU	IO cards per BCU: Combination of DIU, DOU, AIU and TMU
Mimic on BCU	LCD display, 16 LED's (5 are system LED's and 11 are user configurable), Keypad for local control.
POWER SUPPLY BOARD	
Model	BIU241-A04
Input Supply	110V DC
Input Power (Max.)	40W
Watchdog	One watchdog relay (closed if the product is healthy)
COMMUNICATION (IN POWER SUPPLY BOARD)	
Ports & Data transmission rates	2 No RS485 ports (Insulated), Full-duplex serial protocol with transmission rate of 50 to 38400 bps
PROCESSOR	
Model	CPU275
Microprocessor	32-bits microprocessor (266 MHz)
RAM/ROM	128Mb Flash Memory, 256Mb SDRAM
Internal Battery	C264 have internal battery for hold SOE buffer memory.
COMMUNICATION (IN PROCESSOR UNIT)	
Serial	2 (non-insulated) legacy interfaces RS232 with transmission rate of 50 to 56000 bps
IRIG-B	One IRIG-B input (BNC plug)
Ethernet	2 Nos 10/100 Base-T (copper) port – RJ45 connector Port 1: SBUS(IEC61850) for communication IEDs + SCADA + MAINTENANCE Port 2: Communication of IEC104 SCADA protocol.

Issue: B

Drawing Reference: I1-226017525-4-004

Page 3 / 8

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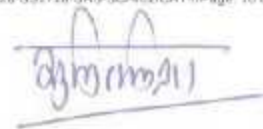
DIGITAL INPUT BOARD	
Model	DIU211
No. Of Channels	16 Optically Isolated DI with 1 negative common contact for 2 inputs
Scanning Period	1 ms
Input Voltage	110V DC
DIGITAL OUTPUT BOARD	
Model	DOU201
Burden	On internal 5V bus is 250mW plus 200mW per activated relay
No. Of Channels	8 single pole relays with one normally open (NO) contact 2 single pole relays with one common for 2 outputs (NO/NC) Contacts current carrying capacity are 5A continuous, 30 A for 500ms and 100 A for 30ms
TRANSDUCER LESS MEASUREMENT UNIT	
Model	TMU220
Frequency Range	50 or 60 Hz +/- 10%
No. of Channels	4 measurement Current Transformers (4 CT) inputs, range 1 or 5 amperes, selectable by jumper 4 measurement Voltage Transformers (4 VT) inputs, range (VN): 57.73 Vrms to 130 Vrms
ETHERNET SWITCH UNIT	
Model	REU V2
Ports	2 Eth. SFP based Ports (HSR/PRP/RSTP) + 10/100BaseT RJ45 Eth. Port.
Software	PACIS
Configuration & Diagnostic Software	SCE & CAT Tool
WEB Access	C264 can be access through Web access with Http
C264 can support min 1000 data Points for both soft & hardwired signals	Compliance, C264 can support max. 5000 data points (hardwire & soft signals).
Serial Ports	2 Nos RS485 ports on BIU modules & 2 Nos Ports on CPU modules which can be configured up to 115200 BPS

Issue: B

Drawing Reference: I1-226017525-4-004

Page 4 / 8

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TECHNICAL SPECIFICATION OF ETHERNET FIBER SWITCH

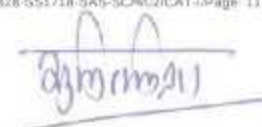
PARAMETERS	TECHNICAL DATA
Make	Hirschmann
Port	16Fx MM
Configuration	100Mbps FX (Multimode Mode)
Installation	Rack mount
Connector Type	ST for Fiber
Operating Voltage	110 VDC
Redundancy Functions	Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), Sub Ring Manager, RSTP 802.1D-2004 (IEC62439-1), RSTP Guards
Switching Method	Store and forward
Protocol	Complies with IEC 61850 protocol
Operating Temp. Range	0 to 60° C
Ingress Protection	IP30

Issue: B

Drawing Reference: I1-226017525-4-004

Page 5 / 8

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TECHNICAL DATASHEET OF FIBER OPTIC CABLE

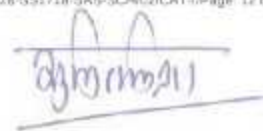
PARAMETERS	TECHNICAL DATA
Make	AKSH / Preston / Reputed
Cable Type	6 Core Multi mode Cable
Fiber Type	62.5/125 mm
Armoured /Unarmoured	Armoured
Attenuation	< 3.5 dB/km @850nm, <1.0 dB/km @1300nm
Band Width	>= 200 MHz.km @850nm, >=500 MHz.km @1300nm
No. of Fibres	6 Core
Colour of Fiber	BLUE, WHITE, ORANGE, GREEN, BROWN & SLATE
Cladding Diameter	125um $\pm$ 2
Core Diameter	62.5 um $\pm$ 3
Numeric ApeC264re	0.275 $\pm$ 0.015
Outer Cable Diameter	>=8.0 mm $\pm$ 0.5
Max. Installation Tension	1500 Newton
Min. Bending Radius	80mm (temporary) 160mm (permanent)
Crush Resistance	2000 Newton
Operating/ Installation Temperature	-30 to +70°C

Issue: B

Drawing Reference: I1-226017525-4-004

Page 6 / 8

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CROSS SECTIONAL VIEW:

OUTER SHEATH (H.D.P.E.)

CORRUGATED STEEL TAPE

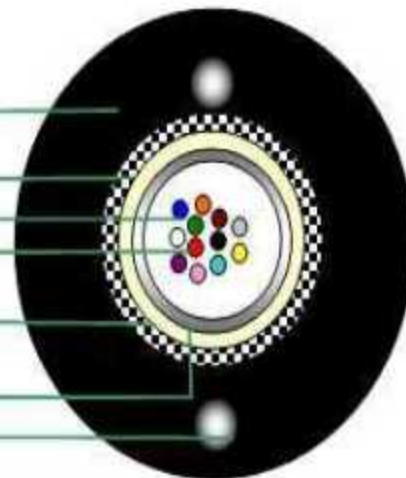
FILLING JELLY

OPTICAL FIBRE

GLASS YARN REINFORCEMENT

LOOSE TUBE WITH FIBRES

STEEL WIRE

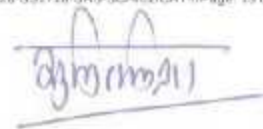


Issue: B

Drawing Reference: I1-226017525-4-004

Page 7 / 8

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TECHNICAL DATASHEET OF LINE INTERFACE UNIT (LIU)

PARAMETERS	TECHNICAL DATA
Make	AFT/PRESTON/EQUIVALENT
Insertion Loss	< 0.1 dB (for adapters)
No. of Ports	12
Height	19" rack mountable
Connector Type	Fiber optic connector – ST Type

Issue: B

Drawing Reference: I1-226017525-4-004

Page 8 / 8

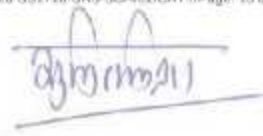
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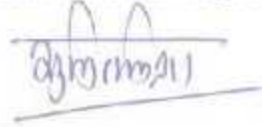
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		Date			Date			Date			FA
		Name			Name			Name			FA
		Date			Date			Date			FA
A	FIRST ISSUE	Name	KM		Name	DG		Name	PJ		FA
		Date	17-10-2023		Date	17-10-2023		Date	17-10-2023		
REV.	DESCRIPTION	DRAWN		BY	CHECKED		BY	APPROVED		BY	STATUS
CUSTOMER:  POWERGRID CORPORATION OF INDIA LIMITED											
CONTRACTOR:  TRANSRAIL LIGHTING LIMITED, INDIA											
PROJECT : EXTN. OF 132KV AIS & UPGRADATION TO 220KV GIS AT NAMSAL (POWERGRID) S/S											
ORDER NO.: 2120004146/17.08.2023											
DOCUMENT: BOQ											
SUPPLIER  Schneider-Electric Infrastructure Limited				DOCUMENT No. I1-226017525-4-007		TOTAL SH. 2		SH. No. 001		REV. A	



BILL OF QUANTITY

S.No	ITEM DESCRIPTION	QTY	UNIT	MAKE / MODEL	REMARKS
1	FO armoured 6 core cable	700	Mtrs	REPUTED	As per Approved GTP
2	LIU- 12 Port	1	Nos.	REPUTED	As per Approved GTP
3	Patch Cord				
3a	LC-LC MM 3m	30	Nos.	REPUTED	As per Approved GTP
3b	LC-LC MM 5m	10	Nos.		
3c	LC-LC MM 10m	10	Nos.		
4	Spare-BCU	1	Nos.	SCHNEIDER ELECTRIC	
5	Spare-EFS	1	Nos.	REPUTED	As per Approved GTP

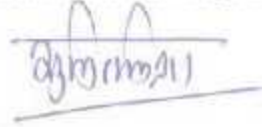


DF001

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		Name		Name		Name		FA	
		Date		Date		Date			
		Name		Name		Name		FA	
		Date		Date		Date			
A	FIRST ISSUE	Name	KM	Name	DG	Name	PJ	FA	
		Date	06-09-2023	Date	06-09-2023	Date	06-09-2023		
REV.	DESCRIPTION	DRAWN	Z	CHECKED	Z	APPROVED	Z	STATUS	
CUSTOMER:		 POWERGRID CORPORATION OF INDIA LIMITED							
CONTRACTOR:		 TRANSRAIL LIGHTING LIMITED, INDIA							
PROJECT:		EXTN. OF 132kV AIS & UPGRADATION TO 220kV GIS AT NAMSAI (POWERGRID) S/S							
ORDER NO.:		2120004146/17.08.2023							
DOCUMENT:		IP LIST							
SUPPLIER		 Schneider-Electric Infrastructure Limited			DOCUMENT No.		TOTAL SH.	SH. No.	REV.
					I1-226017525-4-010		2	001	A

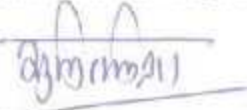
220KV/132KV/33KV NAMSAI								
S.NO.	VOLTAGE LEVEL	BAY REF	PANEL REF	IED	NETWORK NAME	IP ADDRESS	SUBNET MASK	SCOPE
1	220KV	TRAFO-1 HV BAY	T1A	C264	T1HVBCU	172.20.34.30	255.255.255.0	New
2			T1A	P643	T164R	172.20.34.31	255.255.255.0	New
3			T1B	P643	T187T	172.20.34.32	255.255.255.0	New
4			T1B	P141	T167N	172.20.34.33	255.255.255.0	New
5		LINE-1 BAY	L1A	C264	L1BCU	172.20.34.36	255.255.255.0	New
6			L1A	P546	L121M1	172.20.34.37	255.255.255.0	New
7			L1B	REL760	L121M2	172.20.34.38	255.255.255.0	New
8		TRAFO-2 HV BAY	T2A	C264	T2HVBCU	172.20.34.40	255.255.255.0	New
9			T2A	P643	T264R	172.20.34.41	255.255.255.0	New
10			T2B	P643	T287T	172.20.34.42	255.255.255.0	New
11			T2B	P141	T267N	172.20.34.43	255.255.255.0	New
12		BUSCOUPLER	BC	C264	BCBCU	172.20.34.46	255.255.255.0	New
13			BC	P141	B5051	172.20.34.47	255.255.255.0	New
14			BC	P741	B87BB	172.20.34.48	255.255.255.0	New
15		REACTOR	RA	C264	RCBCU	172.20.34.50	255.255.255.0	New
16			RA	P546	R21	172.20.34.51	255.255.255.0	New
17			RB	P141	R67	172.20.34.52	255.255.255.0	New
18			RB	P643	R64R	172.20.34.53	255.255.255.0	New
19		LINE-2 BAY	RB	P643	R87	172.20.34.54	255.255.255.0	New
20			L2A	C264	L2BCU	172.20.34.56	255.255.255.0	New
21			L2A	P546	L221M1	172.20.34.57	255.255.255.0	New
22			L2B	REL760	L221M2	172.20.34.58	255.255.255.0	New
23		AUX	AUX	C264	AUXBCU	172.20.34.59	255.255.255.0	New
24	132KV	TRAFO-1 LV BAY	T1	C264	T1LVBCU	172.20.34.95	255.255.255.0	New
25			T1	P643	T1871	172.20.34.96	255.255.255.0	New
26			T1	P643	T1872	172.20.34.97	255.255.255.0	New
27		TRAFO-2 LV BAY	T2	C264	T2LVBCU	172.20.34.98	255.255.255.0	New
28			T2	P643	T2871	172.20.34.99	255.255.255.0	New
29			T2	P643	T2872	172.20.34.100	255.255.255.0	New
30		TEZU	P7	C264	L1	172.20.34.11	255.255.255.0	Existing
31			P7	P442	P442L1	172.20.34.86	255.255.255.0	Existing
32			P8	P141	P141LBB1	172.20.34.63	255.255.255.0	Existing
33			P8	P141	P141L7L1	172.20.34.65	255.255.255.0	Existing
34		ICT1	P2	C264	ICT1	172.20.34.14	255.255.255.0	Existing
35			P2	P141	ICT167	172.20.34.62	255.255.255.0	Existing
36			P2	P141	P64HVT1	172.20.34.74	255.255.255.0	Existing
37			P2	P632	P632T1	172.20.34.78	255.255.255.0	Existing
38			P2	P141	LBBICT1	172.20.34.162	255.255.255.0	Existing
39			P2	P141	P64LVT1	172.20.34.76	255.255.255.0	Existing
40		TBC	P4	C264	TBC	172.20.34.13	255.255.255.0	Existing
41			P4	P141	LBBTBC	172.20.34.64	255.255.255.0	Existing
42		BR	P1	C264	BR	172.20.34.12	255.255.255.0	Existing
43			P1	P141	BR64R	172.20.34.111	255.255.255.0	Existing
44			P1	P442	BRP442	172.20.34.69	255.255.255.0	Existing
45			P1	P632	BR632	172.20.34.71	255.255.255.0	Existing
46			P1	P141	BR67R	172.20.34.93	255.255.255.0	Existing
47		ICT2	P6	C264	ICT2	172.20.34.18	255.255.255.0	Existing
48			P6	P141	ICT267R	172.20.34.143	255.255.255.0	Existing
49			P6	P141	P64HVT2	172.20.34.75	255.255.255.0	Existing
50			P6	P632	P632T2	172.20.34.79	255.255.255.0	Existing
51			P6	P141	LBBICT2	172.20.34.123	255.255.255.0	Existing
52			P6	P141	P64LVT2	172.20.34.77	255.255.255.0	Existing
53	33KV	ICT-1	P2	C264	INCOMER1	172.20.34.21	255.255.255.0	Existing
54		ICT-2	P2	C264	INCOMER2	172.20.34.26	255.255.255.0	Existing
55		OG LINE-1	P6	C264	OSUNE1	172.20.34.16	255.255.255.0	Existing
56		OG LINE-2	P6	C264	OSUNE2	172.20.34.27	255.255.255.0	Existing
57		LT TRAFO	P6	C264	TRAFO	172.20.34.28	255.255.255.0	Existing
58		LINE-2	P9	REC670	E1Q05KF1	172.20.34.171	255.255.255.0	Existing
59			P9	REL670	E1Q05FN1	172.20.34.173	255.255.255.0	Existing
60			P10	REF615	E1Q05FN2	172.20.34.172	255.255.255.0	Existing
61			P10	7VK61	E1Q05FN3	172.20.34.174	255.255.255.0	Existing
62	Control Room	Control Room	AUX PANEL	C264	AUXBCU1	172.20.34.15	255.255.255.0	Existing
63			AUX PANEL	C264	AUXBCU2	172.20.34.252	255.255.255.0	Existing
64			AUX PANEL	ADVANTECH	OISERV1	172.20.34.1	255.255.255.0	Existing
65			AUX PANEL	ADVANTECH	OISERV1	172.20.34.2	255.255.255.0	Existing
66			CONSOLE	ADVANTECH	OWS1	172.20.34.3	255.255.255.0	Existing
67			CONSOLE	ADVANTECH	OWS2	172.20.34.4	255.255.255.0	Existing
68			CONSOLE	ADVANTECH	SMT	172.20.34.150	255.255.255.0	Existing
69			AUX PANEL	ADVANTECH	GTWLDC	172.20.34.5	255.255.255.0	Existing
70			AUX PANEL	ADVANTECH	GTWRLDC	172.20.34.6	255.255.255.0	Existing
71			AUX PANEL	GPS	GPS	172.20.34.10	255.255.255.0	Existing



DF001

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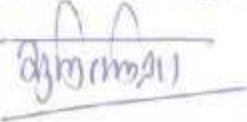
		Name		Name		Name		
		Date		Date		Date		FA
		Name		Name		Name		FA
		Date		Date		Date		
A	FIRST ISSUE	Name	KM	Name	DG	Name	PJ	FA
		Date	12-09-2023	Date	12-09-2023	Date	12-09-2023	
REV.	DESCRIPTION	DRAWN		CHECKED		APPROVED		STATUS
CUSTOMER:  POWERGRID CORPORATION OF INDIA LIMITED								
CONTRACTOR:  TRANSRAIL LIGHTING LIMITED, INDIA								
PROJECT: EXTN. OF 132kV AIS & UPGRADATION TO 220kV GIS AT NAMSAI (POWERGRID) S/S								
ORDER NO.: 2120004146/17.08.2023								
DOCUMENT: IO LIST								
SUPPLIER  Schneider-Electric Infrastructure Limited				DOCUMENT No. I1-226017525-4-006		TOTAL SH. 3	SH. No. 001	REV. A



220kV KATHALGURI LINE-1							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	DISCONNECTOR 89L OPEN	BCU	X	-	-	-	
13	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	
17	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89LE CLOSE	BCU	X	-	-	-	
20	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21	CB SPRING EXCESSIVE RUNTIME(Y-PH)	BCU	X	-	-	-	SPS
22	CB SPRING EXCESSIVE RUNTIME(B-PH)	BCU	X	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD-1	BCU	X	-	-	-	SPS
30	POLE DISCREPANCY OPTD-2	BCU	X	-	-	-	SPS
31	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
32	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
33	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
34	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
35	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
37	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
38	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
40	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
43	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
44	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
45	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
46	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
50	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
51	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
52	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
53	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
56	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
57	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
58	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
59	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
61	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
62	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
63	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
64	CTA/89L/ESB/89LE SWITCHCOMP. GD6 GAS PRESSURELOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
65	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
66	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
67	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
68	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS



220kV KATHALGURI LINE-1							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(BPH)	BCU	X	-	-	-	SP5
71	GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
72	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
73	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
76	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
77	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
78	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
79	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
80	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
81	MAIN BUS-I GD13 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
82	MAIN BUS-I GD13 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
83	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
84	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
85	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
86	MAIN BUS-II GD14 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
87	MAIN BUS-II GD14 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
88	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SP5
89	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SP5
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SP5
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SP5
92	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SP5
93	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SP5
94	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SP5
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	X	-	-	-	SP5
96	AUTORECLOSE L/ORELAY OPTD.	BCU	X	-	-	-	SP5
97	AUTORECLOSE BLOCK	BCU	X	-	-	-	SP5
98	A/R INITIATIONR-PH	BCU	X	-	-	-	SP5
99	A/R INITIATIONY-PH	BCU	X	-	-	-	SP5
100	A/R INITIATIONB-PH	BCU	X	-	-	-	SP5
101	CB TC-1 FAULTY	BCU	X	-	-	-	SP5
102	DC SOURCE-2 FAIL	BCU	X	-	-	-	SP5
103	CARRIER SPEECH CHANNELFAIL	BCU	X	-	-	-	SP5
104	CB TC-2 FAULTY	BCU	X	-	-	-	SP5
105	DIRECT TRIP SEND CH-1 ALARM	BCU	X	-	-	-	SP5
106	DIRECT TRIP SEND CH-2 ALARM	BCU	X	-	-	-	SP5
107	MANUAL CB OPENALARM	BCU	X	-	-	-	SP5
108	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SP5
109	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	X	-	SPC
110	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X	-	SPC
111	AUTO RECLOSE	BCU	-	-	X	-	SPC
112	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
113	CB TRIP COMMANDTC TC-2	BCU	-	-	X	-	SPC
114	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
115	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
116	TO 21M2 MAIN A/R OPTD	BCU	-	-	X	-	SPC
117	BCU FAULTY TO A/R LOCKOUT RELAY	BCU	-	-	X	-	SPC
118	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
119	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	X	-	DPC
120	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	DPC
121	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	DPC
122	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	X	-	DPC
123	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	X	-	DPC
124	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	X	-	DPC
125	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	DPC
126	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
127	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
128	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	X	-	DPC
129	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	DPC
130	A/R LOCKOUT TRIP	BCU	-	-	X	-	SPC
131	MANUAL TRIP TO DT SEND CH-1 CKT	BCU	-	-	X	-	SPC
132	MANUAL TRIP TO DT SEND CH-2 CKT	BCU	-	-	X	-	SPC
133	CB CLOSE COMMAND TO 21M1 FOR SOTF INI	BCU	-	-	X	-	SPC
134	CB CLOSE COMMAND TO 21M2 FOR SOTF INI	BCU	-	-	X	-	SPC
135	POLE DISCREPANCY-1 RESET	BCU	-	-	X	-	SPC
136	POLE DISCREPANCY-2 RESET	BCU	-	-	X	-	SPC
137	A/R LOCKOUT RELAY RESET	BCU	-	-	X	-	SPC
138	A/R OFF	BCU	-	-	X	-	SPC



220kV KATHALGURI LINE-1							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	R PHASE VOLTAGE	BCU	-	-	-	X	MV
140	B PHASE VOLTAGE	BCU	-	-	-	X	MV
141	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
142	R PHASE CURRENT	BCU	-	-	-	X	MV
143	B PHASE CURRENT	BCU	-	-	-	X	MV
144	Y PHASE CURRENT	BCU	-	-	-	X	MV
145	RB LINE VOLTAGE	BCU	-	-	-	X	MV
146	BY LINE VOLTAGE	BCU	-	-	-	X	MV
147	YR LINE VOLTAGE	BCU	-	-	-	X	MV
148	FREQUENCY	BCU	-	-	-	X	MV
149	ACTIVE POWER	BCU	-	-	-	X	MV
150	REACTIVE POWER	BCU	-	-	-	X	MV
151	APPARENT POWER	BCU	-	-	-	X	MV
152	POWER FACTOR	BCU	-	-	-	X	MV
153	GROUP-A TRIP RELAY OPTD.	21M1	-	X	-	-	SP5
154	CARRIER HEALTHY CHANNEL-1	21M1	-	X	-	-	SP5
155	CARRIER RECEIVED CHANNEL-1	21M1	-	X	-	-	SP5
156	CARRIER RECEIVED CHANNEL-2	21M1	-	X	-	-	SP5
157	CARRIER CHANNEL-1 OUT OF SERVICE	21M1	-	X	-	-	SP5
158	CARRIER CHANNEL-2 OUT OF SERVICE	21M1	-	X	-	-	SP5
159	DIRECT TRIP RECEIVED CHANNEL-1	21M1	-	X	-	-	SP5
160	CARRIER HEALTHY CHANNEL-2	21M1	-	X	-	-	SP5
161	DIRECT TRIP RECEIVED CHANNEL-2	21M1	-	X	-	-	SP5
162	CB CLOSE COMMAND	21M1	-	X	-	-	SP5
163	GROUP-A TRIP RELAY 86A SUPERVISION	21M1	-	X	-	-	SP5
164	BUSBAR PROTN. OPTD	21M1	-	X	-	-	SP5
165	LBB PROTN. OPTD	21M1	-	X	-	-	SP5
166	DISTANCE PROTECTION OPERATED	21M1	-	X	-	-	SP5
167	ZONE-1 R-PH TRIP	21M1	-	X	-	-	SP5
168	ZONE-2 R-PH TRIP	21M1	-	X	-	-	SP5
169	ZONE-3 R-PH TRIP	21M1	-	X	-	-	SP5
170	ZONE-4 R-PH TRIP	21M1	-	X	-	-	SP5
171	DIRECTIONAL EARTHFAULT	21M1	-	X	-	-	SP5
172	OVERVOLTAGE OPERATED	21M1	-	X	-	-	SP5
173	SOTF OPERATED	21M1	-	X	-	-	SP5
174	AR OPERATED	21M1	-	X	-	-	SP5
175	CARRIER HEALTHY CHANNEL-2	21M2	-	X	-	-	SP5
176	GROUP-B TRIP RELAY OPTD.	21M2	-	X	-	-	SP5
177	B/B PU RELAY FAULTY	21M2	-	X	-	-	SP5
178	MAIN-I RELAY FAULTY	21M2	-	X	-	-	SP5
179	A/R OPTD. FROM BCU	21M2	-	X	-	-	SP5
180	TRIP RELAY 86B SUPERVISION	21M2	-	X	-	-	SP5
181	DC-1 FAIL	21M2	-	X	-	-	SP5
182	ZONE-1 R-PH TRIP	21M2	-	X	-	-	SP5
183	ZONE-2 R-PH TRIP	21M2	-	X	-	-	SP5
184	ZONE-3 R-PH TRIP	21M2	-	X	-	-	SP5
185	ZONE-4 R-PH TRIP	21M2	-	X	-	-	SP5
186	DIRECTIONAL EARTHFAULT	21M2	-	X	-	-	SP5
187	OVERVOLTAGE OPERATED	21M2	-	X	-	-	SP5
188	SOTF OPERATED	21M2	-	X	-	-	SP5
189	UNDERVOLTAGE OPERATED	21M2	-	X	-	-	SP5

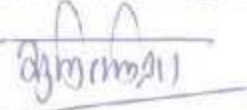
220kV KATHALGURI LINE-2							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	DISCONNECTOR 89L OPEN	BCU	X	-	-	-	
13	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	
17	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89LE CLOSE	BCU	X	-	-	-	
20	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21	CB SPRING EXCESSIVE RUNTIME(Y-PH)	BCU	X	-	-	-	SPS
22	CB SPRING EXCESSIVE RUNTIME(B-PH)	BCU	X	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD-1	BCU	X	-	-	-	SPS
30	POLE DISCREPANCY OPTD-2	BCU	X	-	-	-	SPS
31	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
32	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
33	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
34	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
35	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
37	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
38	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
40	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
43	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
44	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
45	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
46	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
50	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
51	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
52	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
53	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
56	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
57	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
58	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
59	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
61	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
62	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
63	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
64	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
65	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
66	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
67	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
68	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS



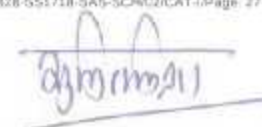
220kV KATHALGURI LINE-2							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(BPH)	BCU	X	-	-	-	SPS
71	GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
72	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
73	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
76	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
77	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
78	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
79	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
80	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
81	MAIN BUS-I GD13 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
82	MAIN BUS-I GD13 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
83	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
84	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
85	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
86	MAIN BUS-II GD14 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
87	MAIN BUS-II GD14 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
88	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
89	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SPS
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
92	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
93	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
94	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	X	-	-	-	SPS
96	AUTORECLOSE L/ORELAY OPTD.	BCU	X	-	-	-	SPS
97	AUTORECLOSE BLOCK	BCU	X	-	-	-	SPS
98	A/R INITIATIONR-PH	BCU	X	-	-	-	SPS
99	A/R INITIATIONY-PH	BCU	X	-	-	-	SPS
100	A/R INITIATIONB-PH	BCU	X	-	-	-	SPS
101	CB TC-1 FAULTY	BCU	X	-	-	-	SPS
102	DC SOURCE-2 FAIL	BCU	X	-	-	-	SPS
103	CARRIER SPEECH CHANNELFAIL	BCU	X	-	-	-	SPS
104	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
105	DIRECT TRIP SEND CH-1 ALARM	BCU	X	-	-	-	SPS
106	DIRECT TRIP SEND CH-2 ALARM	BCU	X	-	-	-	SPS
107	MANUAL CB OPENALARM	BCU	X	-	-	-	SPS
108	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SPS
109	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	X	-	SPC
110	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X	-	SPC
111	AUTO RECLOSE	BCU	-	-	X	-	SPC
112	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
113	CB TRIP COMMANDTC TC-2	BCU	-	-	X	-	SPC
114	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
115	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
116	TO 21M2 MAIN A/R OPTD	BCU	-	-	X	-	SPC
117	BCU FAULTY TO A/R LOCKOUT RELAY	BCU	-	-	X	-	SPC
118	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
119	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	X	-	DPC
120	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	DPC
121	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	DPC
122	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	X	-	DPC
123	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	X	-	DPC
124	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	X	-	DPC
125	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	DPC
126	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
127	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
128	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	X	-	DPC
129	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	DPC
130	A/R LOCKOUT TRIP	BCU	-	-	X	-	SPC
131	MANUAL TRIP TO DT SEND CH-1 CKT	BCU	-	-	X	-	SPC
132	MANUAL TRIP TO DT SEND CH-2 CKT	BCU	-	-	X	-	SPC
133	CB CLOSE COMMAND TO 21M1 FOR SOTF INI	BCU	-	-	X	-	SPC
134	CB CLOSE COMMAND TO 21M2 FOR SOTF INI	BCU	-	-	X	-	SPC
135	POLE DISCREPANCY-1 RESET	BCU	-	-	X	-	SPC
136	POLE DISCREPANCY-2 RESET	BCU	-	-	X	-	SPC
137	A/R LOCKOUT RELAY RESET	BCU	-	-	X	-	SPC
138	A/R OFF	BCU	-	-	X	-	SPC

220kV KATHALGURI LINE-2							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	R PHASE VOLTAGE	BCU	-	-	-	X	MV
140	B PHASE VOLTAGE	BCU	-	-	-	X	MV
141	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
142	R PHASE CURRENT	BCU	-	-	-	X	MV
143	B PHASE CURRENT	BCU	-	-	-	X	MV
144	Y PHASE CURRENT	BCU	-	-	-	X	MV
145	RB LINE VOLTAGE	BCU	-	-	-	X	MV
146	BY LINE VOLTAGE	BCU	-	-	-	X	MV
147	YR LINE VOLTAGE	BCU	-	-	-	X	MV
148	FREQUENCY	BCU	-	-	-	X	MV
149	ACTIVE POWER	BCU	-	-	-	X	MV
150	REACTIVE POWER	BCU	-	-	-	X	MV
151	APPARENT POWER	BCU	-	-	-	X	MV
152	POWER FACTOR	BCU	-	-	-	X	MV
153	GROUP-A TRIP RELAY OPTD.	21M1	-	X	-	-	SP5
154	CARRIER HEALTHY CHANNEL-1	21M1	-	X	-	-	SP5
155	CARRIER RECEIVED CHANNEL-1	21M1	-	X	-	-	SP5
156	CARRIER RECEIVED CHANNEL-2	21M1	-	X	-	-	SP5
157	CARRIER CHANNEL-1 OUT OF SERVICE	21M1	-	X	-	-	SP5
158	CARRIER CHANNEL-2 OUT OF SERVICE	21M1	-	X	-	-	SP5
159	DIRECT TRIP RECEIVED CHANNEL-1	21M1	-	X	-	-	SP5
160	CARRIER HEALTHY CHANNEL-2	21M1	-	X	-	-	SP5
161	DIRECT TRIP RECEIVED CHANNEL-2	21M1	-	X	-	-	SP5
162	CB CLOSE COMMAND	21M1	-	X	-	-	SP5
163	GROUP-A TRIP RELAY 86A SUPERVISION	21M1	-	X	-	-	SP5
164	BUSBAR PROTN. OPTD	21M1	-	X	-	-	SP5
165	LBB PROTN. OPTD	21M1	-	X	-	-	SP5
166	DISTANCE PROTECTION OPERATED	21M1	-	X	-	-	SP5
167	ZONE-1 R-PH TRIP	21M1	-	X	-	-	SP5
168	ZONE-2 R-PH TRIP	21M1	-	X	-	-	SP5
169	ZONE-3 R-PH TRIP	21M1	-	X	-	-	SP5
170	ZONE-4 R-PH TRIP	21M1	-	X	-	-	SP5
171	DIRECTIONAL EARTHFAULT	21M1	-	X	-	-	SP5
172	OVERVOLTAGE OPERATED	21M1	-	X	-	-	SP5
173	SOTF OPERATED	21M1	-	X	-	-	SP5
174	AR OPERATED	21M1	-	X	-	-	SP5
175	CARRIER HEALTHY CHANNEL-2	21M2	-	X	-	-	SP5
176	GROUP-B TRIP RELAY OPTD.	21M2	-	X	-	-	SP5
177	B/B PU RELAY FAULTY	21M2	-	X	-	-	SP5
178	MAIN-I RELAY FAULTY	21M2	-	X	-	-	SP5
179	A/R OPTD. FROM BCU	21M2	-	X	-	-	SP5
180	TRIP RELAY 86B SUPERVISION	21M2	-	X	-	-	SP5
181	DC-1 FAIL	21M2	-	X	-	-	SP5
182	ZONE-1 R-PH TRIP	21M2	-	X	-	-	SP5
183	ZONE-2 R-PH TRIP	21M2	-	X	-	-	SP5
184	ZONE-3 R-PH TRIP	21M2	-	X	-	-	SP5
185	ZONE-4 R-PH TRIP	21M2	-	X	-	-	SP5
186	DIRECTIONAL EARTHFAULT	21M2	-	X	-	-	SP5
187	OVERVOLTAGE OPERATED	21M2	-	X	-	-	SP5
188	SOTF OPERATED	21M2	-	X	-	-	SP5
189	UNDERVOLTAGE OPERATED	21M2	-	X	-	-	SP5

220kV TRANSFORMER-3 HV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	
13	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	
17	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89TE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89TE CLOSE	BCU	X	-	-	-	
20	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21	CB SPRING EXCESSIVERUNTIME(Y-PH)	BCU	X	-	-	-	SPS
22	CB SPRING EXCESSIVERUNTIME(B-PH)	BCU	X	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD.-1	BCU	X	-	-	-	SPS
30	POLE DISCREPANCY OPTD.-2	BCU	X	-	-	-	SPS
31	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
32	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
33	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
34	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
35	B COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
37	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
38	CB COMP. GD1 GAS PRESSURELOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
40	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
43	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
44	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
45	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
46	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW1ST STAGE-(R PH)	BCU	X	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
50	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
51	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
52	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
53	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
56	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
57	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
58	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
59	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
61	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
62	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
63	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
64	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE-(Y PH)	BCU	X	-	-	-	SPS
65	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
66	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
67	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
68	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS



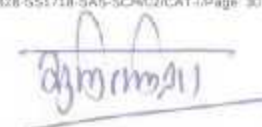
220kV TRANSFORMER-3 HV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
71	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
72	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
73	GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
76	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
77	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
78	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
79	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
80	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
81	MAIN BUS-I GD15 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
82	MAIN BUS-I GD15 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
83	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
84	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
85	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
86	MAIN BUS-II GD16 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
87	MAIN BUS-II GD16 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
88	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
89	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SPS
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
92	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
93	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
94	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	X	-	-	-	SPS
96	DC-1 FAIL	BCU	X	-	-	-	SPS
97	DC SOURCE-2 FAIL	BCU	X	-	-	-	SPS
98	IV BAY IN TRANSFER MODE	BCU	X	-	-	-	SPS
99	CB TC-1 FAULTY	BCU	X	-	-	-	SPS
100	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
101	MANUAL CB OPENALARM	BCU	X	-	-	-	SPS
102	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SPS
103	IRF-67	BCU	X	-	-	-	SPS
104	IRF-PU	BCU	X	-	-	-	SPS
105	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	X	-	SPC
106	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X	-	SPC
107	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
108	CB TRIP COMMANDTC TC-2	BCU	-	-	X	-	SPC
109	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
110	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
111	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
112	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	X	-	DPC
113	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	DPC
114	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	DPC
115	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	X	-	DPC
116	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	X	-	DPC
117	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	X	-	DPC
118	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	DPC
119	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
120	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
121	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	X	-	DPC
122	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	DPC
123	POLE DISCREPANCY -1 RESET	BCU	-	-	X	-	SPC
124	POLE DISCREPANCY -2 RESET	BCU	-	-	X	-	SPC
125	OLTC RAISE	BCU	-	-	X	-	SPC
126	OLTC LOWER	BCU	-	-	X	-	SPC
127	75A SELECT	BCU	-	-	X	-	SPC
128	75A DESELECT	BCU	-	-	X	-	SPC
129	75B SELECT	BCU	-	-	X	-	SPC
130	75B DESELECT	BCU	-	-	X	-	SPC
131	R PHASE VOLTAGE	BCU	-	-	-	X	MV
132	B PHASE VOLTAGE	BCU	-	-	-	X	MV
133	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
134	R PHASE CURRENT	BCU	-	-	-	X	MV
135	B PHASE CURRENT	BCU	-	-	-	X	MV
136	Y PHASE CURRENT	BCU	-	-	-	X	MV
137	RB LINE VOLTAGE	BCU	-	-	-	X	MV
138	BY LINE VOLTAGE	BCU	-	-	-	X	MV



220kV TRANSFORMER-3 HV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	VR LINE VOLTAGE	BCU	-	-	-	X	MV
140	FREQUENCY	BCU	-	-	-	X	MV
141	ACTIVE POWER	BCU	-	-	-	X	MV
142	REACTIVE POWER	BCU	-	-	-	X	MV
143	APPARENT POWER	BCU	-	-	-	X	MV
144	POWER FACTOR	BCU	-	-	-	X	MV
145	64R FAULTY	87T	-	X	-	-	SP5
146	64 OPTD	87T	-	X	-	-	SP5
147	86A OPTD	87T	-	X	-	-	SP5
148	86B OPTD	87T	-	X	-	-	SP5
149	86A SUPVN	87T	-	X	-	-	SP5
150	MAIN CB CLOSED	87T	-	X	-	-	SP5
151	MAIN CB OPEN	87T	-	X	-	-	SP5
152	LV MAIN CB OPEN	87T	-	X	-	-	SP5
153	LV LBB OPTD	87T	-	X	-	-	SP5
154	LV TBC OPEN	87T	-	X	-	-	SP5
155	LV TBC LBB OPTD	87T	-	X	-	-	SP5
156	87T FAULTY	64R	-	X	-	-	SP5
157	87T OPTD	64R	-	X	-	-	SP5
158	86B OPTD	64R	-	X	-	-	SP5
159	86B SUPVN	64R	-	X	-	-	SP5
160	MOG LOW ALARM	P141	-	X	-	-	SP5
161	MOG HIGH ALARM	P141	-	X	-	-	SP5
162	OLTC MOG LOW ALARM	P141	-	X	-	-	SP5
163	AIR CELL RAPTURE RELAY ALARM	P141	-	X	-	-	SP5
164	BUCHHOLZ ALARM	P141	-	X	-	-	SP5

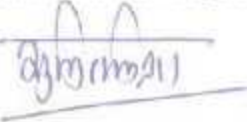
220kV TRANSFORMER-4 HV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	
13	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	
17	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89TE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89TE CLOSE	BCU	X	-	-	-	
20	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21	CB SPRING EXCESSIVERUNTIME(Y-PH)	BCU	X	-	-	-	SPS
22	CB SPRING EXCESSIVERUNTIME(B-PH)	BCU	X	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD.-1	BCU	X	-	-	-	SPS
30	POLE DISCREPANCY OPTD.-2	BCU	X	-	-	-	SPS
31	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
32	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
33	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
34	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
35	B COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
37	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
38	CB COMP. GD1 GAS PRESSURELOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
40	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
43	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
44	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
45	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
46	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
50	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
51	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
52	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
53	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
56	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
57	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
58	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
59	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
61	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
62	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
63	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
64	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
65	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
66	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
67	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
68	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS

220kV TRANSFORMER-4 HV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
71	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
72	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
73	GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
76	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
77	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
78	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
79	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
80	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
81	MAIN BUS-I GD15 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
82	MAIN BUS-I GD15 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
83	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
84	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
85	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
86	MAIN BUS-II GD16 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
87	MAIN BUS-II GD16 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
88	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
89	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SPS
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
92	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
93	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
94	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	X	-	-	-	SPS
96	DC-1 FAIL	BCU	X	-	-	-	SPS
97	DC SOURCE-2 FAIL	BCU	X	-	-	-	SPS
98	IV BAY IN TRANSFER MODE	BCU	X	-	-	-	SPS
99	CB TC-1 FAULTY	BCU	X	-	-	-	SPS
100	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
101	MANUAL CB OPENALARM	BCU	X	-	-	-	SPS
102	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SPS
103	IRF-67	BCU	X	-	-	-	SPS
104	IRF-PU	BCU	X	-	-	-	SPS
105	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	X	-	SPC
106	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X	-	SPC
107	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
108	CB TRIP COMMANDTC TC-2	BCU	-	-	X	-	SPC
109	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
110	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
111	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
112	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	X	-	DPC
113	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	DPC
114	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	DPC
115	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	X	-	DPC
116	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	X	-	DPC
117	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	X	-	DPC
118	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	DPC
119	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
120	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
121	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	X	-	DPC
122	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	DPC
123	POLE DISCREPANCY -1 RESET	BCU	-	-	X	-	SPC
124	POLE DISCREPANCY -2 RESET	BCU	-	-	X	-	SPC
125	OLTC RAISE	BCU	-	-	X	-	SPC
126	OLTC LOWER	BCU	-	-	X	-	SPC
127	75A SELECT	BCU	-	-	X	-	SPC
128	75A DESELECT	BCU	-	-	X	-	SPC
129	75B SELECT	BCU	-	-	X	-	SPC
130	75B DESELECT	BCU	-	-	X	-	SPC
131	R PHASE VOLTAGE	BCU	-	-	-	X	MV
132	B PHASE VOLTAGE	BCU	-	-	-	X	MV
133	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
134	R PHASE CURRENT	BCU	-	-	-	X	MV
135	B PHASE CURRENT	BCU	-	-	-	X	MV
136	Y PHASE CURRENT	BCU	-	-	-	X	MV
137	RB LINE VOLTAGE	BCU	-	-	-	X	MV
138	BY LINE VOLTAGE	BCU	-	-	-	X	MV

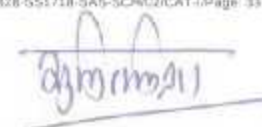


220kV TRANSFORMER-4 HV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	VR LINE VOLTAGE	BCU	-	-	-	X	MV
140	FREQUENCY	BCU	-	-	-	X	MV
141	ACTIVE POWER	BCU	-	-	-	X	MV
142	REACTIVE POWER	BCU	-	-	-	X	MV
143	APPARENT POWER	BCU	-	-	-	X	MV
144	POWER FACTOR	BCU	-	-	-	X	MV
145	64R FAULTY	87T	-	X	-	-	SPS
146	64 OPTD	87T	-	X	-	-	SPS
147	86A OPTD	87T	-	X	-	-	SPS
148	86B OPTD	87T	-	X	-	-	SPS
149	86A SUPVN	87T	-	X	-	-	SPS
150	MAIN CB CLOSED	87T	-	X	-	-	SPS
151	MAIN CB OPEN	87T	-	X	-	-	SPS
152	LV MAIN CB OPEN	87T	-	X	-	-	SPS
153	LV LBB OPTD	87T	-	X	-	-	SPS
154	LV TBC OPEN	87T	-	X	-	-	SPS
155	LV TBC LBB OPTD	87T	-	X	-	-	SPS
156	87T FAULTY	64R	-	X	-	-	SPS
157	87T OPTD	64R	-	X	-	-	SPS
158	86B OPTD	64R	-	X	-	-	SPS
159	86B SUPVN	64R	-	X	-	-	SPS
160	MOG LOW ALARM	P141	-	X	-	-	SPS
161	MOG HIGH ALARM	P141	-	X	-	-	SPS
162	OLTC MOG LOW ALARM	P141	-	X	-	-	SPS
163	AIR CELL RAPTURE RELAY ALARM	P141	-	X	-	-	SPS
164	BUCHHOLZ ALARM	P141	-	X	-	-	SPS

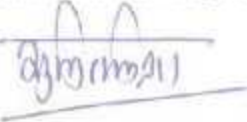
220kV REACTOR							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	
13	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	
17	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89TE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89TE CLOSE	BCU	X	-	-	-	
20	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21	CB SPRING EXCESSIVE RUNTIME(Y-PH)	BCU	X	-	-	-	SPS
22	CB SPRING EXCESSIVE RUNTIME(B-PH)	BCU	X	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD.-1	BCU	X	-	-	-	SPS
30	POLE DISCREPANCY OPTD.-2	BCU	X	-	-	-	SPS
31	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
32	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
33	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
34	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
35	B COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
37	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
38	CB COMP. GD1 GAS PRESSURELOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
40	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
43	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
44	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
45	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
46	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW1ST STAGE-(R PH)	BCU	X	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
50	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
51	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
52	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
53	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
56	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
57	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
58	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
59	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
61	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
62	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
63	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
64	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE-(Y PH)	BCU	X	-	-	-	SPS
65	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE-(B PH)	BCU	X	-	-	-	SPS
66	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
67	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE-(R,Y,B PH)	BCU	X	-	-	-	SPS
68	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE-(R PH)	BCU	X	-	-	-	SPS
69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE-(Y PH)	BCU	X	-	-	-	SPS



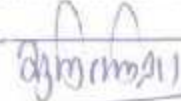
220kV REACTOR							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE-(B PH)	BCU	X	-	-	-	SP5
71	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE-(R,Y,B PH)	BCU	X	-	-	-	SP5
72	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE-(R,Y,B PH)	BCU	X	-	-	-	SP5
73	GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE-(Y PH)	BCU	X	-	-	-	SP5
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE-(B PH)	BCU	X	-	-	-	SP5
76	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE-(R,Y,B PH)	BCU	X	-	-	-	SP5
77	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE-(R,Y,B PH)	BCU	X	-	-	-	SP5
78	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
79	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
80	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
81	MAIN BUS-I GD15 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
82	MAIN BUS-I GD15 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
83	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
84	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
85	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
86	MAIN BUS-II GD16 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
87	MAIN BUS-II GD16 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
88	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SP5
89	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SP5
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SP5
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SP5
92	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SP5
93	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SP5
94	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SP5
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	X	-	-	-	SP5
96	DC-1 FAIL	BCU	X	-	-	-	SP5
97	DC SOURCE-2 FAIL	BCU	X	-	-	-	SP5
98	CB TC-1 FAULTY	BCU	X	-	-	-	SP5
99	CB TC-2 FAULTY	BCU	X	-	-	-	SP5
100	MANUAL CB OPENALARM	BCU	X	-	-	-	SP5
101	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SP5
102	IRF-PU	BCU	X	-	-	-	SP5
103	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	X	-	-	SPC
104	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	X	-	-	SPC
105	CB TRIP COMMANDTC TC-1	BCU	-	X	-	-	SPC
106	CB TRIP COMMANDTC TC-2	BCU	-	X	-	-	SPC
107	TRIP RELAY 86A RESET	BCU	-	X	-	-	SPC
108	TRIP RELAY 86B RESET	BCU	-	X	-	-	SPC
109	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	X	-	-	DPC
110	DISCONNECTOR 89A OPEN COMMAND	BCU	-	X	-	-	DPC
111	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	X	-	-	DPC
112	DISCONNECTOR 89B OPEN COMMAND	BCU	-	X	-	-	DPC
113	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	X	-	-	DPC
114	DISCONNECTOR 89L OPEN COMMAND	BCU	-	X	-	-	DPC
115	EARTH SWITCH ESA OPEN COMMAND	BCU	-	X	-	-	DPC
116	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	X	-	-	DPC
117	EARTH SWITCH ESB OPEN COMMAND	BCU	-	X	-	-	DPC
118	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	X	-	-	DPC
119	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	X	-	-	DPC
120	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	X	-	-	DPC
121	POLE DISCREPANCY -1 RESET	BCU	-	X	-	-	SPC
122	POLE DISCREPANCY -2 RESET	BCU	-	X	-	-	SPC
123	75A SELECT	BCU	-	X	-	-	SPC
124	75A DESELECT	BCU	-	X	-	-	SPC
125	75B SELECT	BCU	-	X	-	-	SPC
126	75B DESELECT	BCU	-	X	-	-	SPC
127	R PHASE VOLTAGE	BCU	-	-	-	X	MV
128	B PHASE VOLTAGE	BCU	-	-	-	X	MV
129	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
130	R PHASE CURRENT	BCU	-	-	-	X	MV
131	B PHASE CURRENT	BCU	-	-	-	X	MV
132	Y PHASE CURRENT	BCU	-	-	-	X	MV
133	RB LINE VOLTAGE	BCU	-	-	-	X	MV
134	BY LINE VOLTAGE	BCU	-	-	-	X	MV
135	YR LINE VOLTAGE	BCU	-	-	-	X	MV
136	FREQUENCY	BCU	-	-	-	X	MV
137	ACTIVE POWER	BCU	-	-	-	X	MV
138	REACTIVE POWER	BCU	-	-	-	X	MV



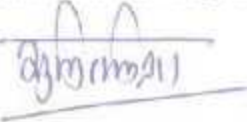
220kV REACTOR							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	APPARENT POWER	BCU	-	-	-	X	MV
140	POWER FACTOR	BCU	-	-	-	X	MV
141	64R FAULTY	87T	X	-	-	-	SP5
142	64 OPTD	87T	X	-	-	-	SP5
143	86A OPTD	87T	X	-	-	-	SP5
144	86B OPTD	87T	X	-	-	-	SP5
145	86A SUPVN	87T	X	-	-	-	SP5
146	MAIN CB CLOSED	87T	X	-	-	-	SP5
147	MAIN CB OPEN	87T	X	-	-	-	SP5
148	LV MAIN CB OPEN	87T	X	-	-	-	SP5
149	LV LBB OPTD	87T	X	-	-	-	SP5
150	LV TBC OPEN	87T	X	-	-	-	SP5
151	LV TBC LBB OPTD	87T	X	-	-	-	SP5
152	OCEF OPTD	87T	X	-	-	-	SP5
153	21 FAULTY	87T	X	-	-	-	SP5
154	OTI ALARM	87T	X	-	-	-	SP5
155	BUCH. TRIP	87T	X	-	-	-	SP5
156	PRV-1 TRIP	87T	X	-	-	-	SP5
157	PRV-2 TRIP	87T	X	-	-	-	SP5
158	PNRV TRIP	87T	X	-	-	-	SP5
159	WTI TRIP	87T	X	-	-	-	SP5
160	SPR TRIP	87T	X	-	-	-	SP5
161	87T FAULTY	64R	X	-	-	-	SP5
162	BUCH. TRIP	64R	X	-	-	-	SP5
163	PRV-1 TRIP	64R	X	-	-	-	SP5
164	PRV-2 TRIP	64R	X	-	-	-	SP5
165	WTI TRIP	64R	X	-	-	-	SP5
166	OTI TRIP	64R	X	-	-	-	SP5
167	BUCHHOLZ ALARM	21	X	-	-	-	SP5
168	MOG LOW ALARM	21	X	-	-	-	SP5
169	MOG HIGH ALARM	21	X	-	-	-	SP5
170	AIR CELL RAPTURE RELAY ALARM	21	X	-	-	-	SP5
171	86B OPTD	21	X	-	-	-	SP5
172	86B SUPVN	21	X	-	-	-	SP5
173	87T OPTD	21	X	-	-	-	SP5
174	WTI ALARM	21	X	-	-	-	SP5



220kV BUSCOUPLER							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB-R-PHASE OPEN	BCU	X	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	
7	CB POSITION	BCU	-	X	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	
10	DISCONNECTOR 89B OPEN	BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	
13	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
14	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	
16	EARTH SWITCH 200-89AE OPEN	BCU	X	-	-	-	
17	EARTH SWITCH 200-89AE CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 200-89BE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 200-89BE CLOSE	BCU	X	-	-	-	
20	VT-I R-PHASE ISLOATOR OPEN	BCU	X	-	-	-	DPS
21	VT-I R-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
22	VT-I Y-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
23	VT-I Y-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	DPS
24	VT-I B-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
25	VT-I B-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
26	VT-II R-PHASE ISLOATOR OPEN	BCU	X	-	-	-	DPS
27	VT-II R-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
28	VT-II Y-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
29	VT-II Y-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	DPS
30	VT-II B-PHASE ISLOATOR OPEN	BCU	X	-	-	-	
31	VT-II B-PHASE ISLOATOR CLOSE	BCU	X	-	-	-	
32	CB SPRING EXCESSIVE RUNTIME (R-PH)	BCU	X	-	-	-	SPS
33	CB SPRING EXCESSIVE RUNTIME (Y-PH)	BCU	X	-	-	-	SPS
34	CB SPRING EXCESSIVE RUNTIME (B-PH)	BCU	X	-	-	-	SPS
35	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
36	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
37	CB MOTOR FAIL(B-PH)	BCU	X	-	-	-	SPS
38	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
39	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
40	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
41	POLE DISCREPANCY OPTD.-1	BCU	X	-	-	-	SPS
42	POLE DISCREPANCY OPTD.-2	BCU	X	-	-	-	SPS
43	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
44	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
45	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
46	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
47	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
48	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
49	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
50	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
51	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
52	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
53	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
54	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
55	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
56	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
57	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
58	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
59	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
60	89B/ESB COMP. GD3 GAS PRESS. LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
61	89B/ESB COMP. GD3 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
62	89B/ESB COMP. GD3 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
63	89B/ESB COMP. GD3 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
64	89B/ESB COMP. GD3 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
65	ESA COMP. GD4 GAS PRESS. LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
66	ESA COMP. GD4 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
67	ESA COMP. GD4 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
68	ESA COMP. GD4 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
69	ESA COMP. GD4 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS

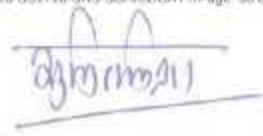


220kV BUSCOUPLER							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	BUFFER COMP. GD5 GAS PRESS. LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
71	BUFFER COMP. GD5 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
72	BUFFER COMP. GD5 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
73	BUFFER COMP. GD5 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
74	BUFFER COMP. GD5 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
75	CTA COMP. GD6 GAS PRESS. LOW1ST STAGE (GAS REFILL)-(R PH)	BCU	X	-	-	-	SP5
76	CTA COMP. GD6 GAS PRESS. LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
77	CTA COMP. GD6 GAS PRESS. LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
78	CTA COMP. GD6 GAS PRESS. LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
79	CTA COMP. GD6 GAS PRESS. LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
80	200-ESA COMP. GD9 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
81	200-ESA COMP. GD9 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
82	200-ESA COMP. GD9 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
83	200-ESA COMP. GD9 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
84	200-ESA COMP. GD9 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
85	VT - I COMP. GD10 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
86	VT - I COMP. GD10 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
87	VT - I COMP. GD10 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
88	VT - I COMP. GD10 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH) ≤ 0.51 MPa	BCU	X	-	-	-	SP5
89	VT - I COMP. GD10 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) ≤ 0.50 MPa	BCU	X	-	-	-	SP5
90	200-ESB COMP. GD11 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
91	200-ESB COMP. GD11 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
92	200-ESB COMP. GD11 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
93	200-ESB COMP. GD11 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
94	200-ESB COMP. GD11 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
95	VT - II COMP. GD12 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
96	VT - II COMP. GD12 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
97	VT - II COMP. GD12 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
98	VT - II COMP. GD12 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
99	VT - II COMP. GD12 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
100	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
101	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
102	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
103	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
104	MAIN BUS-I BUFFER COMP. GD21 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
105	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
106	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
107	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
108	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
109	MAIN BUS-II BUFFER COMP. GD22 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
110	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
111	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
112	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
113	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
114	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
115	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SP5
116	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SP5
117	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SP5
118	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
119	MAIN BUS-II BUFFER COMP. GD20 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SP5
120	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SP5
121	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SP5
122	N/M SWITCH IN MAINTENANCE MODE	BCU	X	-	-	-	SP5
123	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SP5
124	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SP5
125	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SP5
126	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SP5
127	VT-II MCB STATUS	BCU	X	-	-	-	SP5
128	VT-I MCB STATUS	BCU	X	-	-	-	SP5
129	DS/ES ABNORMAL CIRCUITSUPERVISION STATUS	BCU	X	-	-	-	SP5
130	DC-1 FAIL	BCU	X	-	-	-	SP5
131	DC-2 FAIL	BCU	X	-	-	-	SP5
132	CB TC-1 FAULTY	BCU	X	-	-	-	SP5
133	CB TC-2 FAULTY	BCU	X	-	-	-	SP5
134	PU RELAY FAULTY	BCU	X	-	-	-	SP5
135	CB MANUAL CLOSE	BCU	X	-	-	-	SP5
136	CB MANUAL TRIP	BCU	X	-	-	-	SP5
137	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(RPH)	BCUM	X	-	-	-	SP5
138	MAIN BUS-I BUFFER COMP. GD19 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCUM	X	-	-	-	SP5



220KV BUSCOUPLER							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
139	MAIN BUS-I BUFFERCOMP.GD19 GASPRESSURE LOW 1STSTAGE-(BPH)	BCUM	X	-	-	-	SPS
140	MAIN BUS-I BUFFERCOMP.GD19 GASPRESSURE LOW 2NDSTAGE-(R,Y,BPH)	BCUM	X	-	-	-	SPS
141	MAIN BUS-II BUFFERCOMP.GD20 GAS PRESSURE LOW1ST STAGE-(RPH)	BCUM	X	-	-	-	SPS
142	MAIN BUS-II BUFFERCOMP.GD20 GAS PRESSURE LOW1ST STAGE-(YPH)	BCUM	X	-	-	-	SPS
143	MAIN BUS-II BUFFERCOMP.GD20 GASPRESSURELOW1STSTAGE-(BPH)	BCUM	X	-	-	-	SPS
144	MAIN BUS-II BUFFERCOMP.GD20 GASPRESSURE LOW 2NDSTAGE-(R,Y,BPH)	BCUM	X	-	-	-	SPS
145	L/R SWITCH IN LOCALMODE	BCUM	X	-	-	-	SPS
146	N/M SWITCH IN NORMALMODE	BCUM	X	-	-	-	SPS
147	N/M SWITCH IN MAINTENACEMODE	BCUM	X	-	-	-	SPS
148	DC-1 SUPPLY FAIL	BCUM	X	-	-	-	SPS
149	DC-2 SUPPLY FAIL	BCUM	X	-	-	-	SPS
150	DCDB-2 SUPPLY FAIL	BCUM	X	-	-	-	SPS
151	DCDB-1 SUPPLY FAIL	BCUM	X	-	-	-	SPS
152	VT-II MCB STATUS	BCUM	X	-	-	-	SPS
153	VT-I MCB STATUS	BCUM	X	-	-	-	SPS
154	DS/ES ABNORMALCIRCUIT SUPERVISIONSTATUS	BCUM	X	-	-	-	SPS
155	PU RELAY OPTD	BCUM	X	-	-	-	SPS
156	PU RELAY FAULTY	BCUM	X	-	-	-	SPS
157	LBB PROT.N. OPTD	BCUM	X	-	-	-	SPS
137	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	X	-	SPC
138	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X	-	SPC
139	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
140	CB TRIP COMMANDTC TC-2	BCU	-	-	X	-	SPC
141	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
142	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
143	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
144	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	X	-	DPC
145	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	DPC
146	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	DPC
147	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	X	-	DPC
148	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	DPC
149	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
150	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
151	EARTH SWITCH 200-ESA OPEN COMMAND	BCU	-	-	X	-	DPC
152	EARTH SWITCH 200-ESA CLOSE COMMAND	BCU	-	-	X	-	DPC
153	EARTH SWITCH 200-ESB OPEN COMMAND	BCU	-	-	X	-	DPC
154	EARTH SWITCH 200-ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
155	POLE DISCREPANCY -1 RESET	BCU	-	-	X	-	SPC
156	POLE DISCREPANCY -2 RESET	BCU	-	-	X	-	SPC
157	R PHASE VOLTAGE	BCU	-	-	-	X	MV
158	B PHASE VOLTAGE	BCU	-	-	-	X	MV
159	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
160	R PHASE CURRENT	BCU	-	-	-	X	MV
161	B PHASE CURRENT	BCU	-	-	-	X	MV
162	Y PHASE CURRENT	BCU	-	-	-	X	MV
163	RB LINE VOLTAGE	BCU	-	-	-	X	MV
164	BY LINE VOLTAGE	BCU	-	-	-	X	MV
165	YR LINE VOLTAGE	BCU	-	-	-	X	MV
166	FREQUENCY	BCU	-	-	-	X	MV
167	ACTIVE POWER	BCU	-	-	-	X	MV
168	REACTIVE POWER	BCU	-	-	-	X	MV
169	APPARENT POWER	BCU	-	-	-	X	MV
170	POWER FACTOR	BCU	-	-	-	X	MV

220kV TRANSFORMER-3 LV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB OPEN	BCU	X	-	-	-	DPS
2	CB CLOSED	BCU	X	-	-	-	
3	CB POSITION	BCU	-	X	-	-	
4	DISCONNECTOR 89M OPEN	BCU	X	-	-	-	DPS
5	DISCONNECTOR 89M CLOSE	BCU	X	-	-	-	
6	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	
7	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	DPS
8	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
9	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
10	DISCONNECTOR 89L OPEN	BCU	X	-	-	-	DPS
11	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	
12	GAS REFILL ALARM	BCU	X	-	-	-	
13	LOW GAS PR. ALARM-1	BCU	X	-	-	-	SPS
14	LOW GAS PR. ALARM-2	BCU	X	-	-	-	SPS
15	GAS PR. LOCKOUT	BCU	X	-	-	-	SPS
16	CLOSING SPRING CHARGED	BCU	X	-	-	-	SPS
17	SPRING FAIL TO CHARGE	BCU	X	-	-	-	SPS
18	MOTOR OVERLOAD	BCU	X	-	-	-	SPS
19	DC-1 FAIL	BCU	X	-	-	-	SPS
20	DC-2 FAIL	BCU	X	-	-	-	SPS
21	AC FAIL	BCU	X	-	-	-	SPS
22	CB L/R IN REMOTE	BCU	X	-	-	-	SPS
23	CB CLOSE CMD	BCU	X	-	-	-	SPS
24	DC-1 FAIL	BCU	X	-	-	-	SPS
25	DC-2 FAIL	BCU	X	-	-	-	SPS
26	TC-1 FAULTY	BCU	X	-	-	-	SPS
27	TC-2 FAULTY	BCU	X	-	-	-	SPS
28	CB OPEN CMD	BCU	X	-	-	-	SPS
29	96 OPTD	BCU	X	-	-	-	SPS
30	50LBB OPTD	BCU	X	-	-	-	SPS
31	ITX MODE	BCU	X	-	-	-	SPS
32	87-1 FAULTY	BCU	X	-	-	-	SPS
33	87-2 FAULTY	BCU	X	-	-	-	SPS
34	50LBB FAULTY	BCU	X	-	-	-	SPS
35	86A OPTD	BCU	X	-	-	-	SPS
36	86B OPTD	BCU	X	-	-	-	SPS
37	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	X	-	-	SPC
38	CB TRIP COMMAND TC-1	BCU	-	X	-	-	SPC
39	CB TRIP COMMAND TC-2	BCU	-	X	-	-	SPC
40	86A RESET COMMAND	BCU	-	X	-	-	SPC
41	86A RESET COMMAND	BCU	-	X	-	-	SPC
42	DISCONNECTOR 89M CLOSE COMMAND	BCU	-	X	-	-	DPC
43	DISCONNECTOR 89M OPEN COMMAND	BCU	-	X	-	-	
44	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	X	-	-	
45	DISCONNECTOR 89L OPEN COMMAND	BCU	-	X	-	-	DPC
46	DISCONNECTOR 89T CLOSE COMMAND	BCU	-	X	-	-	
47	DISCONNECTOR 89T OPEN COMMAND	BCU	-	X	-	-	
48	EARTH SWITCH 89TE OPEN COMMAND	BCU	-	X	-	-	DPC
49	EARTH SWITCH 89TE CLOSE COMMAND	BCU	-	X	-	-	
50	NITX SELECT	BCU	-	X	-	-	
51	NITX DE SELECT	BCU	-	X	-	-	SPC
52	ITX SELECT	BCU	-	X	-	-	SPC
53	ITX DESELECT	BCU	-	X	-	-	SPC
54	96 RESET COMMAND	BCU	-	X	-	-	SPC
55	89M INTERLOCK	BCU	-	X	-	-	SPC
56	89L INTERLOCK	BCU	-	X	-	-	SPC
57	89T INTERLOCK	BCU	-	X	-	-	SPC
58	89TE INTERLOCK	BCU	-	X	-	-	SPC
59	R PHASE VOLTAGE	BCU	-	-	-	X	MV
60	B PHASE VOLTAGE	BCU	-	-	-	X	MV
61	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
62	R PHASE CURRENT	BCU	-	-	-	X	MV
63	B PHASE CURRENT	BCU	-	-	-	X	MV
64	Y PHASE CURRENT	BCU	-	-	-	X	MV
65	RB LINE VOLTAGE	BCU	-	-	-	X	MV
66	BY LINE VOLTAGE	BCU	-	-	-	X	MV
67	YR LINE VOLTAGE	BCU	-	-	-	X	MV
68	FREQUENCY	BCU	-	-	-	X	MV
69	ACTIVE POWER	BCU	-	-	-	X	MV



220kV TRANSFORMER-3 LV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
70	REACTIVE POWER	BCU	-	-	-	X	MV
71	APPARENT POWER	BCU	-	-	-	X	MV
72	POWER FACTOR	BCU	-	-	-	X	MV

220kV TRANSFORMER-4 LV							
S.NO.	SIGNAL DESCRIPTION	IED	INTERFACE				DATATYPE
			DI(Hard)	DI(Soft)	DO	AI	
1	CB OPEN	BCU	X	-	-	-	DPS
2	CB CLOSED	BCU	X	-	-	-	
3	CB POSITION	BCU	-	X	-	-	
4	DISCONNECTOR 89M OPEN	BCU	X	-	-	-	DPS
5	DISCONNECTOR 89M CLOSE	BCU	X	-	-	-	
6	DISCONNECTOR 89T OPEN	BCU	X	-	-	-	DPS
7	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
8	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	DPS
9	EARTH SWITCH 89LE OPEN	BCU	X	-	-	-	
10	DISCONNECTOR 89L OPEN	BCU	X	-	-	-	DPS
11	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	
12	GAS REFILL ALARM	BCU	X	-	-	-	SPS
13	LOW GAS PR. ALARM-1	BCU	X	-	-	-	SPS
14	LOW GAS PR. ALARM-2	BCU	X	-	-	-	SPS
15	GAS PR. LOCKOUT	BCU	X	-	-	-	SPS
16	CLOSING SPRING CHARGED	BCU	X	-	-	-	SPS
17	SPRING FAIL TO CHARGE	BCU	X	-	-	-	SPS
18	MOTOR OVERLOAD	BCU	X	-	-	-	SPS
19	DC-1 FAIL	BCU	X	-	-	-	SPS
20	DC-2 FAIL	BCU	X	-	-	-	SPS
21	AC FAIL	BCU	X	-	-	-	SPS
22	CB L/R IN REMOTE	BCU	X	-	-	-	SPS
23	CB CLOSE CMD	BCU	X	-	-	-	SPS
24	DC-1 FAIL	BCU	X	-	-	-	SPS
25	DC-2 FAIL	BCU	X	-	-	-	SPS
26	TC-1 FAULTY	BCU	X	-	-	-	SPS
27	TC-2 FAULTY	BCU	X	-	-	-	SPS
28	CB OPEN CMD	BCU	X	-	-	-	SPS
29	96 OPTD	BCU	X	-	-	-	SPS
30	50LBB OPTD	BCU	X	-	-	-	SPS
31	ITX MODE	BCU	X	-	-	-	SPS
32	87-1 FAULTY	BCU	X	-	-	-	SPS
33	87-2 FAULTY	BCU	X	-	-	-	SPS
34	50LBB FAULTY	BCU	X	-	-	-	SPS
35	86A OPTD	BCU	X	-	-	-	SPS
36	86B OPTD	BCU	X	-	-	-	SPS
37	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	X	-	-	SPC
38	CB TRIP COMMANDTC TC-1	BCU	-	X	-	-	SPC
39	CB TRIP COMMANDTC TC-2	BCU	-	X	-	-	SPC
40	86A RESET COMMAND	BCU	-	X	-	-	SPC
41	86A RESET COMMAND	BCU	-	X	-	-	SPC
42	DISCONNECTOR 89M CLOSE COMMAND	BCU	-	X	-	-	DPC
43	DISCONNECTOR 89M OPEN COMMAND	BCU	-	X	-	-	
44	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	X	-	-	DPC
45	DISCONNECTOR 89L OPEN COMMAND	BCU	-	X	-	-	
46	DISCONNECTOR 89T CLOSE COMMAND	BCU	-	X	-	-	DPC
47	DISCONNECTOR 89T OPEN COMMAND	BCU	-	X	-	-	
48	EARTH SWITCH 89TE OPEN COMMAND	BCU	-	X	-	-	DPC
49	EARTH SWITCH 89TE CLOSE COMMAND	BCU	-	X	-	-	
50	NITX SELECT	BCU	-	X	-	-	SPC
51	NITX DE SELECT	BCU	-	X	-	-	SPC
52	ITX SELECT	BCU	-	X	-	-	SPC
53	ITX DESELECT	BCU	-	X	-	-	SPC
54	96 RESET COMMAND	BCU	-	X	-	-	SPC
55	89M INTERLOCK	BCU	-	X	-	-	SPC
56	89L INTERLOCK	BCU	-	X	-	-	SPC
57	89T INTERLOCK	BCU	-	X	-	-	SPC
58	89TE INTERLOCK	BCU	-	X	-	-	SPC
59	R PHASE VOLTAGE	BCU	-	-	-	X	MV
60	B PHASE VOLTAGE	BCU	-	-	-	X	MV
61	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
62	R PHASE CURRENT	BCU	-	-	-	X	MV
63	B PHASE CURRENT	BCU	-	-	-	X	MV
64	Y PHASE CURRENT	BCU	-	-	-	X	MV
65	RB LINE VOLTAGE	BCU	-	-	-	X	MV
66	BY LINE VOLTAGE	BCU	-	-	-	X	MV
67	YR LINE VOLTAGE	BCU	-	-	-	X	MV
68	FREQUENCY	BCU	-	-	-	X	MV
69	ACTIVE POWER	BCU	-	-	-	X	MV



संदर्भ/Ref : CC-ENGG-TR202136-1001604-SS1118-CRP-SAS-GTP

Date : 10/11/2023

From : Somiran Das
General Manager

To : M/s Techno Electric & Engineering Company
Limited
1B, Park Plaza (South), 71
Park Street
Kolkata-700016, West Bengal

Cc : CGM (Projects), RHQ, SR-II

Subject : GIS SS package-SS90:for (i) Extn.of 765/400kV Nizamabad GIS ss including 765kV bus ducts,Bushings,400kV GIS bays etc. under Aug. of Transformation capacity in Southern Region;(ii)(a) Extn. Of 400/230 kV Tuticorin-II GIS ss for installation of 4th ICT & (b) Extn. Of 400/230 kV Tuticorin-II GIS ss for installation of 5th ICT under Transmission system for Tirunelveli and Tuticorin Wind Energy Zone (TN)(500 MW) and (iii) Extn.of 400kV Nizamabad GIS ss under Consultancy services to TSTRANSCO

LOA Ref : CC-CS/5002002107/GIS-EXCLUDING/DOM/A00-CC CS-1/NOA-I/SR2-500007 & CC-CS/5002002107/ GIS-EXCLUDING/DOM/A00-CC CS-1/NOA-II/SR2-500008 Dated 19/05/2022

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : NIZAMABAD GIS S/S- CRP-SAS -GTP
Orgn. Drg. No. : TR202136-1001604-SS1118-CRP-SAS-GTP
Revision No. : 02
Drg. Title : NIZAMABAD GIS S/S- CRP-SAS -GTP
App. Category : CAT-I
Release Date : 10/11/2023



Scan to verify

Comments : -

अनुमोदित श्रेणी/App. Category:

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- REL-CON निर्माण हेतु जारी।
Released for construction.

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as

केन्द्रीय कार्यालय: "सौदामिनी", प्लॉट नंबर 2, सेक्टर -29, गुरुग्राम -122001, (हरियाणा) ,दूरभाष: 0124-2571700-719

Corporate Office: "Saudamini", Plot No. 2, Sector-29, Gurugram-122001, (Haryana) Tel.: 0124-2571700-719

पंजीकृत कार्यालय: बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली -110016, दूरभाष: 011-26560112, 26560121, 26564812, 26564892, सीआईएन: L40101DL1989G0I038121

Registered Office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016. Tel: 011-26560112, 26560121, 26564812, 26564892, CIN : L40101DL1989G0I038121

Website: www.powergridindia.com



पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(ए गवर्नमेंट ऑफ इंडिया एंटरप्राइज)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

- may be applicable, nor does it limits the purchaser's right under the contract,
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

केन्द्रीय कार्यालय: "सौदामिनी", प्लॉट नंबर 2, सेक्टर -29, गुरुग्राम -122001, (हरियाणा) ,दूरभाष: 0124-2571700-719

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पंजीकृत कार्यालय: बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली -110016, दूरभाष: 011-26560112, 26560121, 26564812, 26564892, सीआईएन: L40101DL1989GOI038121

Registered Office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016. Tel: 011-26560112, 26560121, 26564812, 26564892, CIN : L40101DL1989GOI038121

Website: www.powergridindia.com

64 measurements

3. GTP OF ETHERNET FIBER SWITCH

PARAMETERS	TECHNICAL DATA
Make	As per PowerGrid Sub vendor list
Size	19" Rack Mountable
Type	Modular Managed Ethernet Switch
Connector Type	RJ45 for Tx and ST for Fx
Ports	16Fx
Network Speed	10/100Mbps
Auxiliary Voltage	100-240VAC, 50-60HZ or 100-240VDC,
Standards	IEEE802.3x, 802.3p (Flow control) IEEE802.3ad (Port Aggregation) IEEE802.1X IEEE802.3ah, 802.1ag (OAM)
Features	Secure Web Management Port Security SNMP V2, V3 Virtual LAN capability Tag Base VLANs, IGMP snooping and IGMP-L2 multicast management
Forwarding mode	Store & Forwarding mode
Humidity Range	10%...90% (Relative), 5%...95% (Storage)
Approvals	KEMA & IEC61850-3

4. GTP OF LINE INTERFACE UNIT (LIU)

PARAMETERS	TECHNICAL DATA
Make	As per PowerGrid Sub vendor list
Insertion Loss	< 0.1 dB (for adapters)
No. of Ports	12 & 24
Height	19" rack mountable
Connector Type	Fiber optic connector – ST Type

5. GTP OF FIBRE OPTIC CABLE

PARAMETERS	TECHNICAL DATA
Make	As per PowerGrid Sub vendor list
Cable Type	6 Core Multi mode Cable
Fiber Type	62.5/125 mm
Armored /Unarmored	Armored
Attenuation	< 3.5 dB/km @850nm, <1.0 dB/km @1300nm
Band Width	>= 200 MHz.km @850nm, >=500 MHz.km @1300nm
No. of Fibre	6 Core
Color of Fibre	BLUE, WHITE, ORANGE, GREEN, BROWN & SLATE

संदर्भ/Ref : CC-ENGG-TR201928-1001081-SS1720-SAS-ARCH-DRG

Date : 02/02/2022

From : Ashok Kumar
 Senior GM

To : Deejay System Consultants Pvt Lt
 Spazedge, Suite-215, Tower - A, Sec
 Chandigarh 122022
 122022

Cc : ED, NERTS, Shillong

Subject : AIS Sub-Station Package for Bay Extension Of 132kV Roing (POWERGRID) Substation & Bay Extension Of 132kv Chapakhowa (Assam) Substation Associated with North Eastern Region Strengthening Scheme-X (NERSS-X)

LOA Ref : NESH/CSM/FY-2021-22/4500-07/NOA/09 Dated 21/04/2021

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : TR201928-1001081-SSXXXX-132KV-ROING-SAS-ARCH-DRG

Orgn. Drg. No. : TR201928-1001081-SS1720-SAS-ARCH-DRG

Revision No. : 01

Drg. Title : ROING S/S-132KV-CHAPAKHOWA1&2 BAYS-SAS- AUG-
 ARCHITECTURE DRGS

App. Category : CAT-I

Release Date : 02/02/2022


Scan to verify

Comments : M/S Deejay vide mail dtd:27.01.2022 has confirmed to supply & install EFS free of cost without any additional cost implication to POWERGRID.

अनुमोदित श्रेणी/App. Category:

- I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।
Approved/released for fabrication/construction.
- II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रियाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।
Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.
- III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।
To be resubmitted for approval after incorporating the comments.
- IV. सूचनार्थ एवं रिकार्ड हेतु।
For information and record.
- REL-CON निर्माण हेतु जारी।
Released for construction.

नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.
2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

केन्द्रीय कार्यालय: "सौदामिनी", प्लॉट नंबर 2, सेक्टर -29, गुरुग्राम -122001, (हरियाणा) ,दूरभाष: 0124-2571700-719

Corporate Office: "Saudamini", Plot No. 2, Sector-29, Gurugram-122001, (Haryana) Tel.: 0124-2571700-719

पंजीकृत कार्यालय: खी -9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली -110016. दूरभाष: 011-26560112, 26560121, 26564812, 26564892. **सौभाग्य:** L40101DL1989GOI038121

Registered Office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016. Tel: 011-26560112, 26560121, 26564812, 26564892, **CIN :** L40101DL1989GOI038121

Website: www.powergridindia.com

		Revised Drawing Issued For Approval	
		Issued For Approval	
		DESCRIPTION	
		REVISIONS	



DEEJAY SYSTEM CONSULTANTS PVT. LTD.



POWERGRID CORPORATION OF INDIA LIMITED

Division Of 132kV Roing (POWERGRID) Substation & Bay Extension Of 132kv Chapakhowa (Assam) Substation Assam
Strengthening Scheme-X (NERSS-X)

WFY:2021-22/4500-07/NOA/09 DTD 21-04-2021

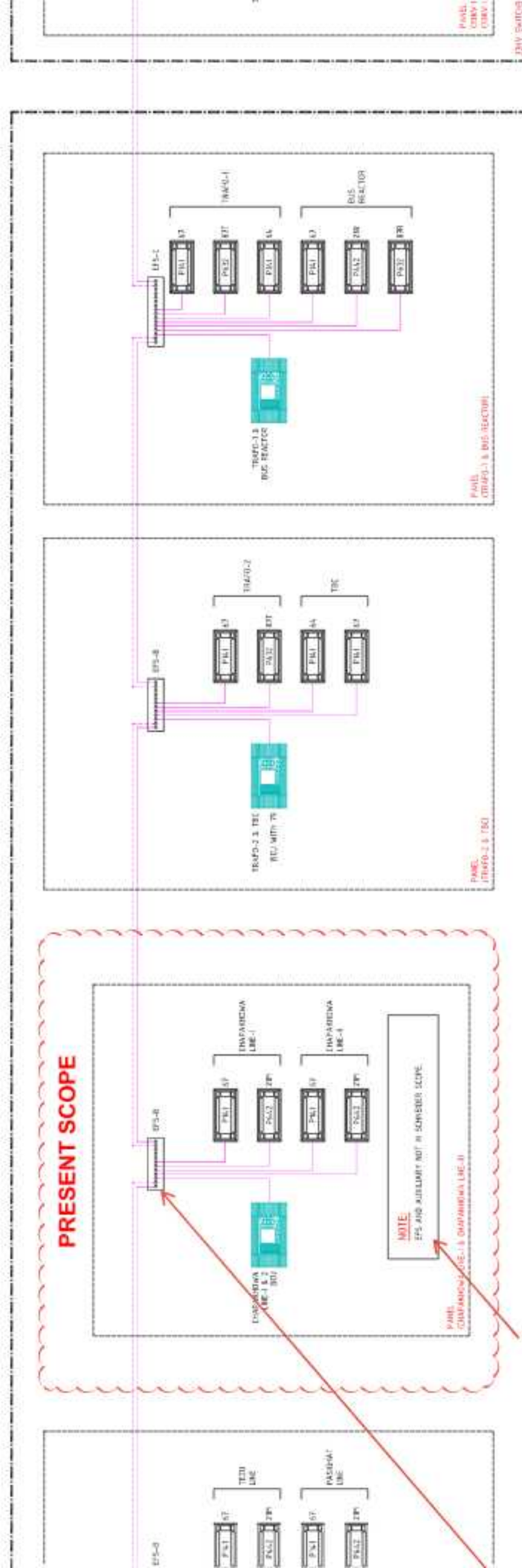
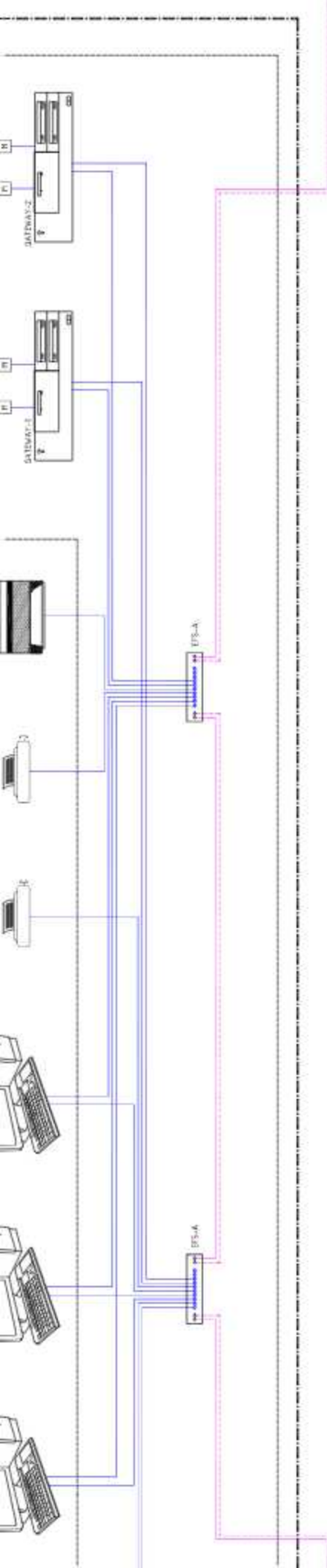
TITLE :

2

DATE

16-Jan-22

POINC S/S 132KV CHAPAKHOWA 182 BAYS SAS AIC ARCHITECT



01.2022 (attached in supporting documents) has
out any additional cost implication to POWERGRID.

LIST OF MATERIALS		
SL	DESCRIPTION	QTY.
1	GPS LOCK WITH ANTENNA (TER. 3.00000000)	1
2	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
3	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
4	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
5	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
6	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
7	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
8	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
9	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
10	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
11	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
12	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
13	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
14	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
15	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
16	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
17	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
18	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
19	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
20	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2
21	ETHERNET FIBER SWITCH (48x + 10G + FIBER)	2

संदर्भ/Ref : CC-ENGG-CS201439-1000328-SS1719-SAS-AUG

Date : 06/12/2022

From : S J Lahiri
 Senior GM

To : FLOWMORE LIMITED
 443 PHASE III GURGAON 122016
 122016

Cc : ED, NERPSIP, Guhwati

Subject : Substation Package-ARP-SS05 under Comprehensive Scheme for Strengthening of Transmission & Distribution System in NER & Sikkim: Intra-State: Arunachal

LOA Ref : CC-CS/165-NER/SS-4220/3/G7/NOA-I/9199 & NOA-II/9200 Dated 30/06/2021

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : KZ2Q-PG-TEZU-SA

Orgn. Drg. No. : CS201439-1000328-SS1719-SAS-AUG

Revision No. : 02

Drg. Title : TEZU(EXTN) S/S -SAS AUGMENTATION DRAWING

App. Category : CAT-I

Release Date : 06/12/2022


Scan to verify

Comments : Approved with remarks to be taken care of.

अनुमोदित श्रेणी/App. Category:

I. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।

Approved/released for fabrication/construction.

II. फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु अनुमोदित/जारी बशर्ते दिए गए टिप्पणियाँ एवं आशोधनों की सम्मिलित किया जाये। कृपया रिवाइज्ड दस्तावेज अनुमोदनार्थ प्रस्तुत करें।

Approved/released for fabrication/ construction subject to incorporation of comments and modification as noted. Revised drawing required for approval.

III. टिप्पणियाँ सम्मिलित करने के उपरांत दस्तावेज को अनुमोदनार्थ प्रस्तुत करें।

To be resubmitted for approval after incorporating the comments.

IV. सूचनार्थ एवं रिकार्ड हेतु।

For information and record.
REL-CON निर्माण हेतु जारी।

Released for construction.
नोट/Note:

1. Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, quantities, design details assemble fits, performance particulars and conformity of the supplies with the Indian Statutory Laws as may be applicable, nor does it limits the purchaser's right under the contract.

2. The approval conveyed vide this letter does not cover the approval of make for sub-vendor items.

SYSTEM ARCHITECTURE

132/33Kv DPAP TEZU Ext. S/S

KZ2Q-PG-TEZU (SA);
Rev-C

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GE T&D India Limited
(Grid Automation-Pallavaram India)

CUSTOMER: DEPARTMENT OF POWER, GOVERNMENT OF ARUNACHAL PRADESH(DPAP)
PROJECT: SUBSTATION PACKAGE ARP-SS05 UNDER COMPREHENSIVE SCHEME FOR STRENGTHENING OF TRANSMISSION AND DISTRIBUTION SYSTEM IN ARUNACHAL PRADESH
DOCUMENT Ref.: KZ2Q-PG-TEZU-SA



DOCUMENT NAME	SYSTEM ARCHITECTURE & BILL OF QUANTITY
OWNER	DEPARTMENT OF POWER, GOVERNMENT OF ARUNACHAL PRADESH(DPAP)
CONSULTANT	POWER GRID CORPORATION OF INDIA LIMITED
CONTRACTOR	FLOWMORE LIMITED
PROJECT	SUBSTATION PACKAGE ARP-SS05 UNDER COMPREHENSIVE SCHEME FOR STRENGTHENING OF TRANSMISSION AND DISTRIBUTION SYSTEM IN ARUNACHAL PRADESH
NOA No.:	CC-CS/165-NER/SS-4220/3/G7/NOA-I/9199 dated 30.6.2021 CC-CS/165-NER/SS-4220/3/G7/NOA-II/9200 dated 30.6.2021
SUBSTATION	DPAP 132/33Kv TEZU Ext. S/s

Rev	Date	Revision Comments	Author	Reviewer	Validator
A	04.02.2022	FOR SUBMISSION	PLS	JKK	SSS
B	09.06.2022	FOR SUBMISSION	SSR	JKK	SSS
C	04.11.2022	FOR SUBMISSION	SSR	JKK	SSS



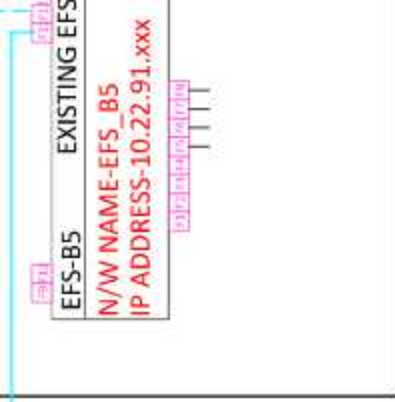
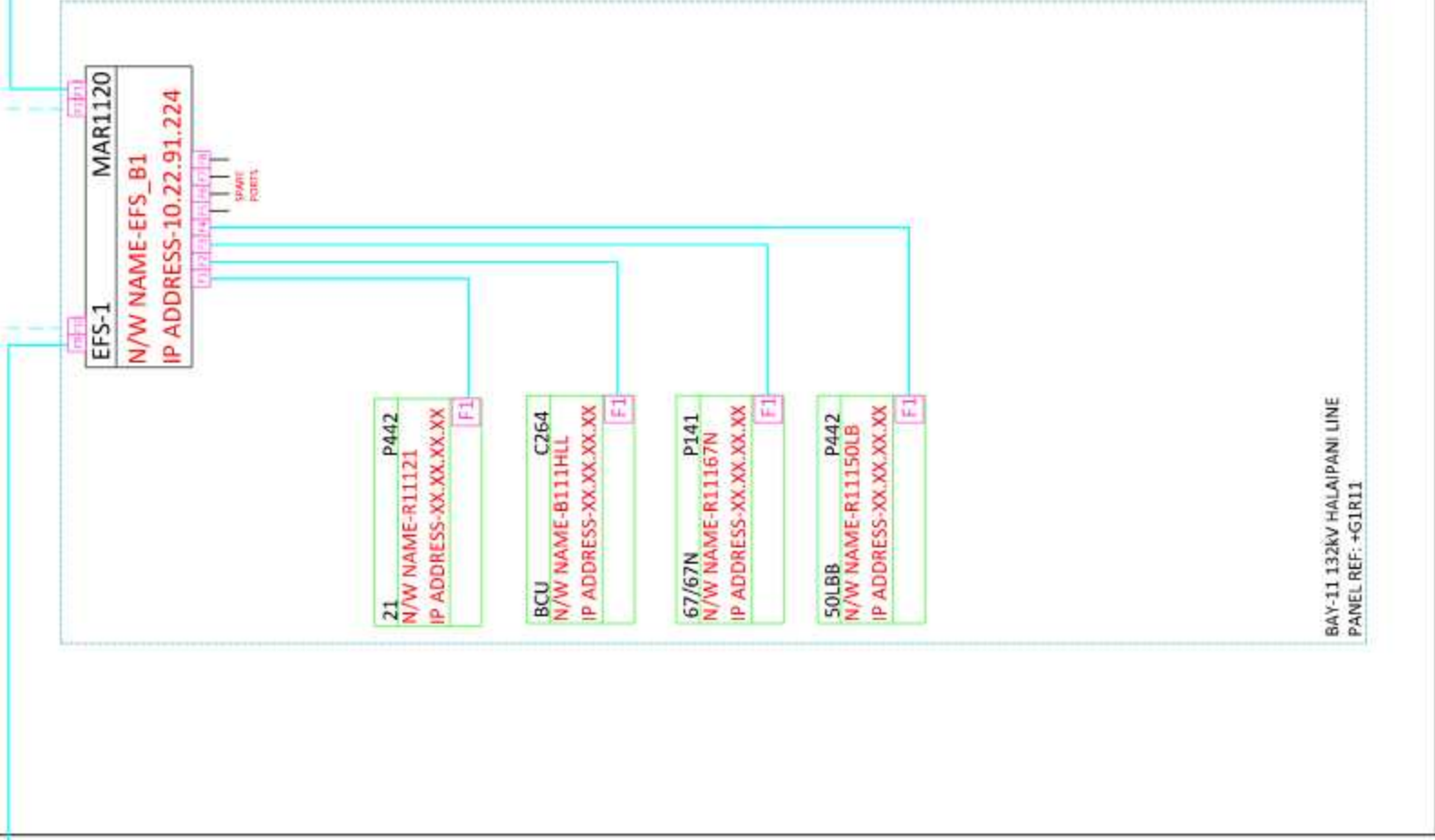
GE T&D India Limited
(Grid Automation-Pallavaram India)

CUSTOMER: DEPARTMENT OF POWER, GOVERNMENT OF ARUNACHAL PRADESH(DPAP)
SUBSTATION: SUBSTATION PACKAGE ARP-SS015 UNDER COMPREHENSIVE SCHEME FOR STRENGTHENING OF TRANSMISSION AND DISTRIBUTION SYSTEM IN ARUNACHAL PRADESH
DOCUMET Ref: KZ2Q-PG-TEZU-SA

REV: C

DATE: 04.11.2022

SHEET : 2 of 5



M/s GE to take care of mounting switch under present scope ins under the present scope.

BILL OF MATERIAL FOR SUBSTATION AUTOMATION SYSTEM					
Title	Substation Package ARP-SS-05 under Comprehensive Scheme for strengthening of Transmission and Distribution System in Arunachal Pradesh				
Project					
Substation	132/33kV TEZU Ext. S/s				
Owner	Department of Power, Government of Arunachal Pradesh (DPAP)				
Consultant	Power Grid Corporation of India Ltd. (PGCIL)				
Contractor	Flowmore Limited				
PGCIL NOA Ref	CC-CS/165-NER/SS-4220/3/G7/NOA-1/9199 dated 30.6.2021				
Flowmore PO Ref	CC-CS/165-NER/SS-4220/3/G7/NOA-1/9200 dated 30.6.2021				
Doc. Ref.	FI/GE/PGCIL-PKG.-ARP-SS-05/230 dated 28.07.2021				
WBS Ref.	KZ2QSAB7				
	3269PP1732				



Sl.No.	Flowmore PO Item Ref as per Annexure-II	Voltage Level	Material Category	Item Description	Make	Unit	Qty.	Panel Ref
1	AUGMENTATION OF SUBSTATION AUTOMATION SYSTEM FOR 132KV BAY AS PER TECHNICAL SPECIFICATION	132KV	BCU	BCU FOR BAY-11 HALAIPANI LINE (4DI;3DO)	ALSTOM	NOS.	1	+GIR11
2		132KV	EF5	ETHERNET SWITCH FOR STATION-RING(EFS-1) (12FX;MM;ST-PORTS)	HIRSCHMANN	NOS.	1	+GIR11
3		132KV	LIU	LIU FOR STATION RING EXTENSION TO 33KV BOARD (24 PORT;MM;ST-PORTS)	GENTECH	NOS.	1	LOOSE
4		132KV	CABLES	FO PATCH CORD (3 MTRS>;MM;ST-ST)	PRESTON	NOS.	6	LOOSE
5		132KV	CABLES	FO PATCH CORD (15 MTRS>;MM;ST-ST)	PRESTON	NOS.	4	LOOSE
6		132KV	BCU	MANDATORY SPARE BCU (4DI;3DO WITH TMU)	ALSTOM	NOS.	1	LOOSE
7	A3	132KV	EF5	MANDATORY SPARE EFS (12FX;MM;ST;RJ45)	HIRSCHMANN	NOS.	1	LOOSE

Any other item required for the successful completion of works shall be supplied by M/s Flowmore without any additional price implication to POWERGRID.