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	<b>Bidder's Queries</b> 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 SUPPLY PORTION NAMSAI POWER GRID SUBSTATION	POWERGRID reply
L.		
	Present Actual Archeitecture along with complete devices protocol types	SAS architecture attached as Annexure-A
2	Existing all devices (All relay, BCU, Ethernet switch, Spare port availability details, GPS details,etc) Model No along with software version.	BCU model no provided in BCU 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. (SCE Database $\&$ PACIS Database or ECOSUI Database and its version)	This shall be part of detailed engineering
5	Note: Assumed as all the spare ports are healthy.	ОК
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	In existing there is no Busbar protection systerm at site. Please confirm, do we need to supply Busbar protection panels for Exising bays including extension bays (2 no's of Extension bays).	Yes bus bar protection includes both present and existing scope.
11	SEIL 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 Archeitecture along with complete devices protocol types	SAS architecture attached as Annexure-C
2	Exisiting all devices (All relay, BCU, Ethernet switch, Spare port availability details, GPS details,etc) Model No along with software version.	BCU model no provided in BCU 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. (SCE Database & PACIS Database or ECOSUI 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	In existing there is no Busbar protection system at site. Please confirm, do we need to supply Busbar protection panels for Exising bays including extension bays (2 no's of Extension bays).	This has been aptly provided in section project. Pt refer ct.
11	SEIL 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 ROING POWER GRID SUBSTATION	
1	Present Actual Archeitecture along with complete devices protocol types	SAS architecture attached as Annexure-B
2	Exisiting all devices (All relay, BCU, Ethernet switch, Spare port availability details, GPS details,etc) Model No along with software version.	BCU model no provided in BCU model sheet
3	All PC's OS details, RAM details, Port details, Spare port availability details.	This shall be part of detailed engineering
4	NATE OF SOS details, NAME details, Port details, Spare pour administrations (SCE Database & PACIS Database or ECOSUI Database and its version)  Existing all SAS related documents and backup are required. (SCE Database & PACIS Database or ECOSUI Database and its version)	This shall be part of detailed engineering
5	Lasting and 3-5 related documents and backup are required. (SCE Database & FACIS Database of ECOSOF Database and its version)  Losting and 3-5 related documents are beautify.	OK
6	Note: Assumed as at the spare poins are nearly.  Control Room Blue Print required with complete dimensions to locate our panel.	This shall be part of detailed engineering
7	Control Notin Date Finit February Complete dimensions to tocate our panet. Existing Board formation	This shall be part of detailed engineering
8	Existing SLD	Already provided with Tender
9	Existing bays scheme drawing	
ٿ	Existing days scheme drawing  Dismantling of Existing all Busbar relays (both PU & CU) by our new relays is not in SEIL scope. All wirings are also not in SEIL scope. SEIL scope is to supply the relays	This shall be part of detailed engineering
10		NA to EPC contractor.EPC to execute as per TS and scope
$\vdash$	as loose material and further testing & commissioning the same after successfully retrofitting by customer.	NA to EDC contractor EDC to consults on nor TC
11	SEIL 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
	SEIL scope is limited to Configuration, Testing & Commissioning of Schneider supplied materials.	NA to EPC contractor.EPC to execute as per TS and scope
6	• • • • • • • • • • • • • • • • • • • •	

**BCU Model** 

 Tezu
 C264M11I6910012304000031111N00

 Roing
 C264M11I6910012304000031111N00

 Namsai
 C264U11I6A100160330000U1111N10



#### **POWER GRID CORPORATION OF INDIA LIMITED**

(A Government of India Enterprise)

Date: 16/07/2024

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

From: Sumit Mishra

**DGM** 

TRANSRAIL LIGHTING LIMITED To:

A-201/209 BOOMERANG COMPLEX MUMBAI

400072 400072

Cc: NA

Subject: Substation Package SS-01for (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.

Drg. Title Namsai- SAS Panel Scheme

App. Category CAT-I

Release Date 16/07/2024

Comments Document in order.

#### अनुमोदित श्रेणी/App. Category:

फेब्रिकेशन/निर्माण/टाइप टेस्टिंग हेतु जारी।

Approved/released for fabrication/construction.

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

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 प्रस्तत करें।

To be resubmitted for approval after incorporating the comments.

IV. सूचनार्थ एवं रिकार्ड हेत्।

For information and record.

CATREL/ निर्माण हेत् जारी।

**REL-CON** Released for construction.

नोट/Note:

Approval/Comments conveyed herein neither relieve the contractor of his contractual obligations and his responsibilities, weights, 1. 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.

Scan to verfiv

628-SS1/18-SAS-SCH/02/CAT-MPage: 1

	<u> </u>					
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
COMPAN	Υ	NR NER TRANSMISSION L	IMITED			
CONSUL	ταντ •	🗐 पावरग्रिड	पावर ग्रिड कॉर्पोरेश	ान ऑफ इंडिया लिमिटेड (भारत सरकार का उद्यम)		
Jones	.,,,,,,	POWERGRID	POWER GRID CORPORA	ATION OF INDIA LIMITED (A Government of India Enterprise)		
CONTRAC	CTOR:	TRÁNSRÁIL				
PROJECT	:	SUBSTATION PACKAGE SS01 FO GIS AT 400/132KV BANKA (POWE AND UPGRADATION OF EXISTING 1X50MVAR, 245KV BUS REACTO KATHALGURI (NEEPCO) SWITCH	ERGRID) UNDER G 132KV NAMSAI R UNDER NERSS	ERSS-XXV, (II) EX I (POWERGRID) S -XV AND (III) 2 NO	TN. OF 132KV AI /S TO 220KV GIS	S SWITCHYARD INCLUDING
LOA NO :		TBCB/ERSS-XXV & NERSS-XV/22 TBCB/ERSS-XXV & NERSS-XV/22				
TITLE :		NAMSAI SUBSTATION AUTOMAT	ION SYSTEM INTI	EGRATION		
STATUS:		For Information For Approval X	For Execution	As Built		
DOCUME	NT NIIMBES	TLL DOCUMENT NUMBER :	G508-TLL-NAM	-VEN-SAS-SCH		REV. 2
DOCOME	NT NUMBEF	PGCIL DOCUMENT NUMBER :	TB202215-1001	828-SS1718-SA	S-SCH	

	Compliance Report		
Customer	PGCIL		
Project	EXTENSION OF 132KV AND UPGRADATION TO 220KV AT NAMSAI SS		
Po.No.	2120004146		Schneider
Comments Reference:	TB202215-1001828-SS1718-SAS-SCH_1		Electric
Compliance Reference:	11-226017525-DCS-Comp-01		
Comment.No	CUSTOMER COMMENTS	Drawing Sheet No	Compliance
	1. Table for BOQ to be shown in this drg.		1. Noted, the same has been Updated.
	2. Present scope of SAS Aug shall be marked.		2. Present scope of SAS supply are marked with BLUE colored boundaries
_	3. for EFS- existing used for present bays & new used for present scope, following details shall be provided in table format:	Sht No.005	3. Existing EFS Ports are not utilized for the present scope of supply. Existing EFS port details are aded in table
	a) total no of Fibre & RJ45 ports b) port Used for present scope c) spare available for future use.		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	Sht No.005 Noted, the same has been Updated.

# **LIST OF DOCUMENTS**

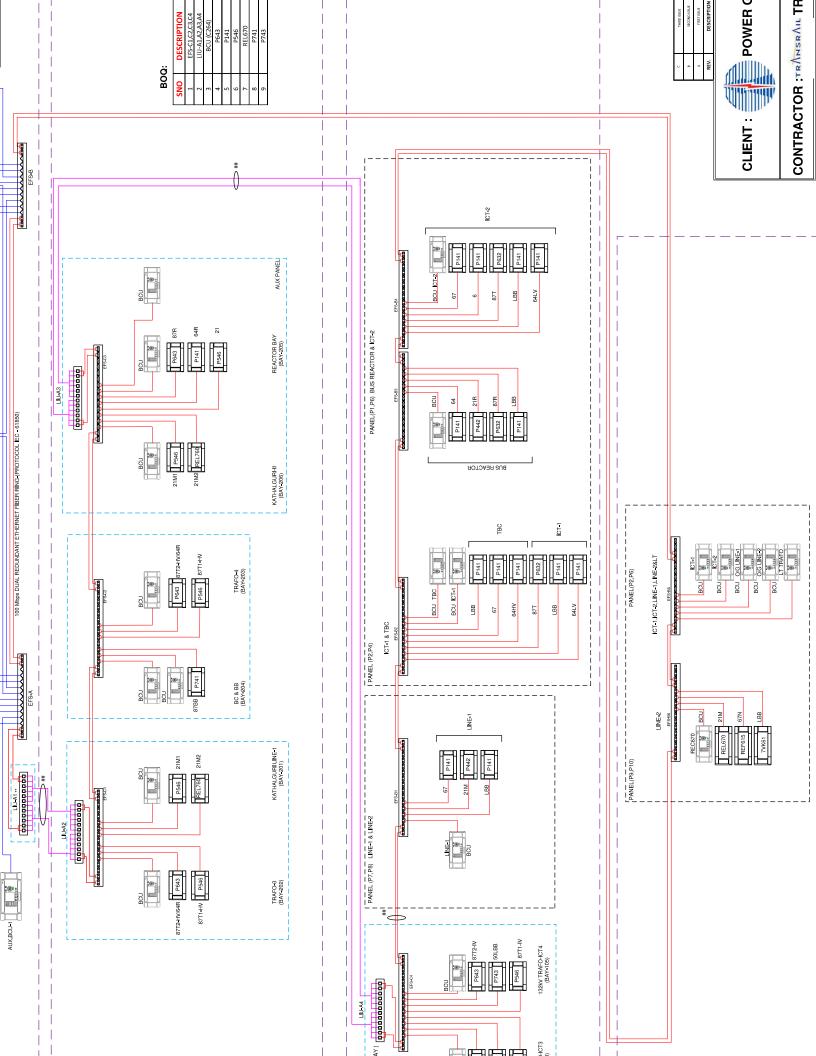
RAWING	DESCRIPTION.	REVISION	DATE	ISSNE
25-4-002	ARCHITECTURE DRAWING	C	22-05-2024	FOR APPROVAL

**PANEL TYPES:** 



POWER GRID CORPORATION OF INDI





Ofto chap11

		EXISTI	NG 132kV &	EXISTING 132kV & 33kV BAYS EFS DETAILS	S EFS DET	AILS				
SR.	LOCATION/PANEL	EFS NAME	TOTAL NO	TOTAL NO OF PORTS	TYPE OI	TYPE OF PORTS	( asp	USED PORTS	SPARE	SPARE PORTS
			FX (FIBRE)	TX/RJ45 (COPPER)	FX (FIBRE)	TX/RJ45 (COPPER)	FX (FIBRE)	TX/RJ45 (COPPER)	FX (FIBRE)	TX/RJ45 (COPPER)
	TEZU LINE BREAKER PANEL(P7B)	HIRCHMANN	32	1			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	HIRCHMANN	32	1	Multimode	RJ45	32	0	0	1
9	NETWORKING PANEL-1	HIRCHMANN	8	13			8	6	0	4
7	7 NETWORKING PANEL-2	HIRCHMANN	8	13			8	8	0	5
8	33 KV BCU PANEL	HIRCHMANN	32	1			22	0	10	1



75	1	1	1	
'OA	m	m	0/1	1
V			1	-

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

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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 TECHI	NICAL P	ARTICUL	.ARS
PREPARED	KM	12-01-2024					-
CHECKED	DG	12-01-2024					
APPROVED	PJ	12-01-2024					
				DRAWING REFERENCE	REV	SHEET	QTYSH
				I1-226017525-4-004	В	1	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

# **TECHNICAL SPECIFICATION OF BCU**

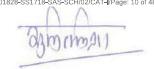
PARAMETERS	TECHNICAL DATA
Make	Schneider Electric
Model	C264
Case	80TE
Communication protocols supported	IEC61850 and all other IEC Protocol like IEC-60870-101, IEC-60870-103, IEC-60870-104, Modbus, DNP3
Hardware version	V6
IO Configuration per BCU	IO cards per BCU: Combination of DIU, DOU, AIU and TMU
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 POWE	R 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 PROC	ESSOR UNIT)
Serial	2 (non-insulated) legacy interfaces RS232 with transmission rate of 50 to 56000 bps
IRIG-B	One IRIG-B input (BNC plug)
	2 Nos 10/100 Base-T (copper) port – RJ45 connector
Ethernet	Port 1: SBUS(IEC61850) for communication IEDs + SCADA + MAINTENANCE
	Port 2: Communication of IEC104 SCADA protocol.

Issue: B

Drawing Reference: I1-226017525-4-004



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 MEASU	
Model	TMU220
Frequency Range	50 or 60 Hz +/- 10%
No. of Channe <b>l</b> s	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



## **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



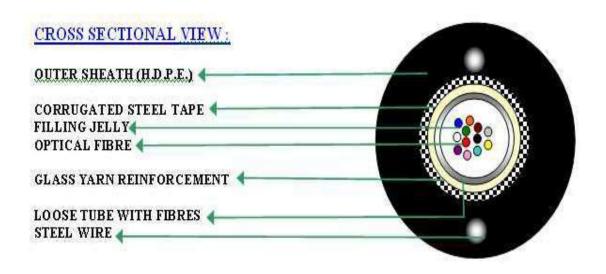
# **TECHNICAL DATASHEET OF FIBER OPTIC CABLE**

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 ± 2						
Core Diameter	62.5 um ± 3						
Numeric ApeC264re	0.275 ±0.015						
Outer Cable Diameter	>=8.0 mm ± 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						

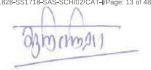
Issue: B

Drawing Reference: I1-226017525-4-004





Issue: B



# **TECHNICAL DATASHEET OF LINE INTERFACE UNIT (LIU)**

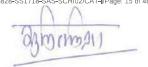
PARAMETERS	TECHNICAL DATA
Make	AFT/PRESTON/EQUIVALENT
Insertion Loss	< 0.1 dB (for adapters)
No. of Ports	12
Height	19" rack mountable
Connector Type	Fiber optic connector – ST Type

Issue: B

01828-SS1718-SAS-SCH/02/CAT-I/Page: 14 of

DF001 This drawing and design is the property of AREVA and must not be copied or lent without prior permiss Name Name Name FA Date Date Date Name Name Name FΑ Date Date Date Name Name PJ Name FIRST ISSUE FΑ 17-10-2023 17-10-2023 17-10-2023 Date DESCRIPTION APPROVED REV. DRAWN CHECKED STATUS CUSTOMER: POWERGRID CORPORATION OF INDIA LIMITED CONTRACTOR: TRANSRAIL 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: **BOQ** SUPPLIER DOCUMENT No. TOTAL SH. SH. No. REV. Schneider Belectric Schneider-Electric Infrastructure Limited 11-226017525-4-007 2 001 Α



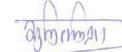


	E	3ILL	. OF	QUANTITY	
S.No	ITEM DESCRIPTION	QTY	UNIT	MAKE / MODEL	REMARKS
1	FO armoured 6 core cable	700	Mtrs	REPUTED	As per Approved GTP
2	LIU- 12 Port	1	Nos.	REPUTED	As per Approved GTP
3	Patch Cord				
3a	LC-LC MM 3m	30	Nos.	REPUTED	As per Approved GTP
3b	LC-LC MM 5m	10	Nos.	KLFOILD	As per Approved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

Osm mais

		Name Date Name Date			Name Date Name Date			Name Date Name Date			FA FA
					Date				PJ		
	EIDET ISSUE	Name	KM		Name	DG	, ,				E 4
A REV.	FIRST ISSUE  DESCRIPTION	Date	06-09-2023	NS NS	Date	06-09-2023	NO NO	Date	06-09-2023 PROVED	n S	FA STATUS
REV.	Date Date Date Date Date Date Date Date										
REV.  CUSTO	DESCRIPTION  MER:  PO  PGCIL  TRÀNSRAIL  TE	Date DWERGRID CO	06-09-2023 RAWN  DRPORA  GHTING	LIM	Date CHE	06-09-2023 ECKED INDIA	LIM	AF	PROVED		
REV.  CUSTO	DESCRIPTION  POPER:  TRANSRAIL  TE  EXTN. OF 132kV AIS & UK	Date DWERGRID CO RANSRAIL LIG	06-09-2023 RAWN  DRPORA  GHTING	LIM kV (	Date CHE N OF	06-09-2023 ECKED INDIA	LIM	AF	PROVED		
REV.  CUSTO	DESCRIPTION  MER:  PO  PGCIL  TRANSRAIL  TE  EXTN. OF 132kV AIS & UR  NO.:	PGRADATION 21200	06-09-2023 RAWN  DRPORA  SHTING  TO 220	LIM kV (	Date CHE N OF	06-09-2023 ECKED INDIA	LIM	AF	PROVED		
REV.  CUSTO	DESCRIPTION  MER:  PO  PGCIL  TRANSRAIL  TE  EXTN. OF 132kV AIS & UR  NO.:	PGRADATION 21200	06-09-2023 RAWN  DRPORA  GHTING  TO 2201  04146/17.	LIM	Date CHE N OF	INDIA INDIA T NAMS	LIM	Date AF	PROVED		STATUS





			220	KV/132KV/3	3KV NAMSAI			1.5
S.NO.	VOLTAGE LEVEL	BAY REF	PANEL REF	IED	NETWORK NAME	IP ADDRESS	SUBNET MASK	SCOPE
1			T1A	C264	T1HVBCU	172.20.34.30	255.255.255.0	New
2		TRAFO-1 HV BAY	T1A	P643	T164R	172.20.34.31	255.255.255.0	New
3		110110 2111 0/11	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 4 DAY	L1A	C264	L1BCU	172.20.34.36	255.255.255.0	New
6 7		LINE-1 BAY	L1A L1B	P546 REL760	L121M1	172.20.34.37 172.20.34.38	255.255.255.0	New New
8	-		T2A	C264	L121M2 T2HVBCU	172.20.34.40	255.255.255.0 255.255.255.0	New
9			T2A	P643	T264R	172.20.34.41	255.255.255.0	New
10		TRAFO-2 HV BAY	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	220kV		BC	C264	BCBCU	172.20.34.46	255.255.255.0	New
13		BUSCOUPLER	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			RA	C264	RCBCU	172.20.34.50	255.255.255.0	New
16		DE 4 070 D	RA	P546	R21	172.20.34.51	255.255.255.0	New
17		REACTOR	RB	P141	R67	172.20.34.52	255.255.255.0	New
18 19			RB RB	P643 P643	R64R R87	172.20.34.53 172.20.34.54	255.255.255.0 255.255.255.0	New
20	}		L2A	C264	L2BCU	172.20.34.56	255.255.255.0	New New
21		LINE-2 BAY	L2A L2A	P546	L221M1	172.20.34.57	255.255.255.0	New
22		2 5/11	L2B	REL760	L221M1 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			T1	C264	T1LVBCU	172.20.34.95	255.255.255.0	New
25		TRAFO-1 LV BAY	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			T2	C264	T2LVBCU	172.20.34.98	255.255.255.0	New
28		TRAFO-2 LV BAY	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			P7	C264	L1	172.20.34.11	255.255.255.0	Existing
31		TEZU	P7	P442	P442L1	172.20.34.86	255.255.255.0	Existing
32			P8	P141	P141LBBL1	172.20.34.63	255.255.255.0	Existing
33 34			P8	P141	P14167L1	172.20.34.65	255.255.255.0	Existing
35			P2	C264 P141	ICT1 ICT167	172.20.34.14 172.20.34.62	255.255.255.0 255.255.255.0	Existing Existing
36			P2 P2	P141 P141	P64HVT1	172.20.34.74	255.255.255.0	Existing
37		ICT1	P2	P632	P632T1	172.20.34.78	255.255.255.0	Existing
38	132kV		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	l	TDC	P4	C264	TBC	172.20.34.13	255.255.255.0	Existing
41		TBC	P4	P141	LBBTBC	172.20.34.64	255.255.255.0	Existing
42			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		BR	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 48			P6	C264	ICT2	172.20.34.18	255.255.255.0 255.255.255.0	Existing
48			P6	P141 P141	ICT267R P64HVT2	172.20.34.143 172.20.34.75	255.255.255.0	Existing Existing
50		ICT2	P6	P632	P64HV12 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		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	OGLINE1	172.20.34.16	255.255.255.0	Existing
56		OG LINE-2	P6	C264	OGLINE2	172.20.34.27	255.255.255.0	Existing
57	33kV	LT TRAFO	P6	C264	TRAFO	172.20.34.28	255.255.255.0	Existing
58			P9	REC670	E1Q05KF1	172.20.34.171	255.255.255.0	Existing
59		LINE-2	P9	REL670	E1Q05FN1	172.20.34.173	255.255.255.0	Existing
60 61			P10 P10	REF615 7VK61	E1Q05FN2	172.20.34.172 172.20.34.174	255.255.255.0 255.255.255.0	Existing
62			AUX PANEL	C264	E1Q05FN3 AUXBCU1	172.20.34.174	255.255.255.0	Existing Existing
63			AUX PANEL	C264	AUXBCU2	172.20.34.252	255.255.255.0	Existing
64			AUX PANEL	ADVANTECH	OISERVM	172.20.34.232	255.255.255.0	Existing
65			AUX PANEL	ADVANTECH	OISERVR	172.20.34.2	255.255.255.0	Existing
66	C+12	Control D	CONSOLE	ADVANTECH	OWS1	172.20.34.3	255.255.255.0	Existing
67	Control Room	Control Room	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

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Osm (ma)

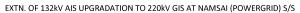
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			Date			Date			Date			
А	FIRST ISSUE		Date Name Date	KM 12-09-2023		Name Date	DG 12-09-2023		Name Date	PJ 12-09-2023		FA
A REV. CUSTO	DMER: PGCIL ACTOR:	POWERGR	Date Name Date	12-09-2023 RAWN	IS S	Name Date CHE	12-09-2023 ECKED	NO LIM	Name Date AF	12-09-2023 PPROVED	5 O	FA
REV.	DESCRIPTION DESCRI	POWERGR TRANSRA	Date Name Date Date D	12-09-2023 RAWN  PRPORA  GHTING	LIM	Name Date CHE N OF	INDIA	LIM	Name Date AF	12-09-2023 PPROVED		
CUSTO	DESCRIPTION  PGCIL  TRANSRAI  ET:  EXTN. OF 132	POWERGR  TRANSRAI  kV AIS & UPGRADA	Date Name Date Date Date DTION	12-09-2023 RAWN  PRPORA  GHTING	LIM kV (	Name Date CHE N OF	INDIA	LIM	Name Date AF	12-09-2023 PPROVED		
CONTRA	DESCRIPTION  PGCIL  TRANSRAI  TT:  EXTN. OF 132	POWERGR  TRANSRAI  kV AIS & UPGRADA	Date Name Date Date Date Date Date Date Date Dat	12-09-2023 RAWN  DRPORA  SHTING  TO 220	LIM kV (	Name Date CHE N OF	INDIA	LIM	Name Date AF	12-09-2023 PPROVED		
REV.  CUSTO  CONTRA  PROJEC  ORDER I  DOCUME	DESCRIPTION  PECIL  ACTOR:  TRANSRAI  TRANSRAI  EXTN. OF 132  NO.:  ENT:  ER  Peider Sch	POWERGR  TRANSRAI  kV AIS & UPGRADA	Date Name Date Date Date Date Date Date Date Dat	12-09-2023 RAWN  DRPORA  GHTING  TO 220  04146/17	kV (	Name Date CHE N OF	INDIA INDIA	LIM	Name Date AF	12-09-2023 PPROVED		STATUS





		1	<u> </u>				
s.no.	SIGNAL DESCRIPTION	IED	D.(1) 1)		RFACE		DATATYPE
1	CB-R-PHASE OPEN	BCU	DI(Hard) X	DI(Soft)	DO -	AI -	
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	DPS
3	CB-Y-PHASE OPEN	BCU	Х	-	-	-	DPS
4	CB-Y-PHASE CLOSED	BCU	Х	-	-	-	DP3
5	CB-B-PHASE OPEN	BCU	Х	-	-	-	DPS
6	CB-B-PHASE CLOSED	BCU	Х	- V	-	-	DDC
7 8	CB POSITION  DISCONNECTOR 89A OPEN	BCU BCU	- X	X -	-	-	DPS
_	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	DPS
10	DISCONNECTOR 89B OPEN	BCU	Х	-	-	-	DPS
11	DISCONNECTOR 89B CLOSE	BCU	Х	-	-	-	DP3
12	DISCONNECTOR 89L OPEN	BCU	Х	-	-	-	DPS
13	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	
14 15	EARTH SWITCH ESA OPEN  EARTH SWITCH ESA CLOSE	BCU BCU	X	-	-	-	DPS
16	EARTH SWITCH ESB OPEN	BCU	X	-	_	_	
	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89LE OPEN	BCU	Х	-	-	-	DPS
19	EARTH SWITCH 89LE CLOSE	BCU	Х	-	-	-	
20	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21 22	CB SPRING EXCESSIVE RUNTIME(Y-PH) CB SPRING EXCESSIVE RUNTIME(B-PH)	BCU BCU	X	-	-	-	SPS SPS
22	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	Х	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	Х	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	Х	-	-	-	SPS
	CB SPRING CHARGED(B-PH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD-1	BCU	X	-	-	-	SPS
30 31	POLE DISCREPANCY OPTD-2 CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(R PH)	BCU BCU	X	-	-	-	SPS 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	Х	•	-	1	SPS
35	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	Х	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	X	-	-	-	SPS
37 38	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)  CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU BCU	X	-	-	-	SPS 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	Х	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	Х	-	-	-	SPS
43	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
44	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
45 46	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(B PH) 89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU BCU	X	-	-		SPS SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND 31AGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-		SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	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 53	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU BCU	X	-	-	-	SPS SPS
54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 151 STAGE -(N 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	Х	-	-	-	SPS
57	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
58	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
59 60	BUFFER COMP. GD5 GAS PRESSURE LOW1ST STAGE -(Y PH) BUFFER COMP. GD5 GAS PRESSURE LOW1ST STAGE -(B PH)	BCU BCU	X	-	-	-	SPS 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	Х	-	-		SPS
64	CTA/89L/ESB/89LE SWITCHCOMP. GD6 GAS PRESSURELOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
65							
66	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)  CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)  GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU BCU BCU	X X X	-	-	-	SPS SPS SPS

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	220kV KATHALGURI LIN	VE-1					
S.NO.	SIGNAL DESCRIPTION	IED			RFACE		DATATYPE
	CIR COMP. ODT ONE DETECTION AND STAGE. (DDI)		DI(Hard)	DI(Soft)	DO	Al	c.p.c
70 71	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(BPH)  GAS PRESSURE LOW 2ND STAGE -(R.Y.B PH)	BCU BCU	X	-	-	-	SPS 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	Х	-	-	-	SPS
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
75	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	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 79	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(R PH)  MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU BCU	X	-	-	-	SPS SPS
80	MAIN BUS-I GD13 GAS PRESSURE LOW 151 STAGE -(1 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	Х	-	-	-	SPS
84	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
85	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
86	MAIN BUS-II GD14 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
87	MAIN BUS-II GD14 GASPRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
88 89	L/R SWITCH IN LOCAL MODE  N/M SWITCH IN MAINTENACE MODE	BCU BCU	X	-	-	-	SPS SPS
90	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	<del>-</del>	SPS
91	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
	DC-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
93	DCDB-1 SUPPLY FAIL	BCU	Х	-	-	-	SPS
	DCDB-2 SUPPLY FAIL	BCU	Х	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	Х	-	-	-	SPS
	AUTORECLOSE L/ORELAY OPTD.	BCU	X	-	-	-	SPS
97 98	AUTORECLOSE BLOCK A/R INITIATIONR-PH	BCU BCU	X	-	-	-	SPS SPS
	A/R INITIATIONY-PH	BCU	X	-	-		SPS
	A/R INITIATIONB-PH	BCU	X	-	-	-	SPS
	CB TC-1 FAULTY	BCU	Х	-	-	-	SPS
102	DC SOURCE-2 FAIL	BCU	Х	-	-	-	SPS
	CARRIER SPEECH CHANNELFAIL	BCU	Х	-	-	-	SPS
	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
	DIRECT TRIP SEND CH-1 ALARM	BCU	X	-	-	-	SPS
	DIRECT TRIP SEND CH-2 ALARM  MANUAL CB OPENALARM	BCU BCU	X	-	-	-	SPS SPS
	MANUAL CB CLOSEALARM	BCU	X	-	-		SPS
	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	Х	-	SPC
110	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	Х	-	SPC
111	AUTO RECLOSE	BCU	-	-	Х	-	SPC
	CB TRIP COMMANDTC TC-1	BCU	-	-	Х	-	SPC
113	CB TRIP COMMANDTC TC-2	BCU	-	-	Х	-	SPC
114	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
	TRIP RELAY 86B RESET TO 21M2 MAIN A/R OPTD	BCU BCU	-	-	X	-	SPC SPC
	BCU FAULTY TO A/R LOCKOUT RELAY	BCU	-	-	X	-	SPC
	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	
	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	Х		DPC
	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	Х	-	DPC
	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	Х	-	1 51 0
	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	X	-	DPC
	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	X	-	
	EARTH SWITCH ESA OPEN COMMAND  EARTH SWITCH ESA CLOSE COMMAND	BCU BCU	-	-	X	-	DPC
	EARTH SWITCH ESA CLOSE COMMAND  EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	X	-	<u> </u>
	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	DPC
	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	Х	-	DPC
	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	Х	-	DPC
	A/R LOCKOUT TRIP	BCU	-	-	Х	-	SPC
	MANUAL TRIP TO DT SEND CH-1 CKT	BCU	-	-	X	-	SPC
	MANUAL TRIP TO DT SEND CH-2 CKT	BCU	-	-	X	-	SPC
	CB CLOSE COMMAND TO 21M1 FOR SOTF INI CB CLOSE COMMAND TO 21M2 FOR SOTF INI	BCU BCU	-	-	X	-	SPC SPC
	POLE DISCREPANCY -1 RESET	BCU	-	-	X	-	SPC
	POLE DISCREPANCY -2 RESET	BCU	-	-	X	-	SPC
	A/R LOCKOUT RELAY RESET	BCU	-	-	Х	-	SPC
138	A/R OFF	BCU	-	-	Х	-	SPC

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C 1:-0	CICALC: DECORPTION						
S.NO.	SIGNAL DESCRIPTION	IED	DI(Hard)	DI(Soft)	DO	AI	DATATYPE
139	R PHASE VOLTAGE	BCU	-	-	-	Х	MV
140	B PHASE VOLTAGE	BCU	-	-	-	Х	MV
141	Y PHASE VOLTAGE	BCU	-	-	-	Х	MV
142	R PHASE CURRENT	BCU	-	-	-	Х	MV
143	B PHASE CURRENT	BCU	-	-	-	Х	MV
144	Y PHASE CURRENT	BCU	-	-	-	Х	MV
145	RB LINE VOLTAGE	BCU	-	-	-	Х	MV
	BY LINE VOLTAGE	BCU	-	-	-	Х	MV
147	YR LINE VOLTAGE	BCU	-	-	-	Х	MV
148	FREQUENCY	BCU	-	-	-	Х	MV
	ACTIVE POWER	BCU	-	-	-	Х	MV
150	REACTIVE POWER	BCU	-	-	-	Х	MV
151	APPARENT POWER	BCU	-	-	-	Х	MV
	POWER FACTOR	BCU	-	-	-	Х	MV
	GROUP-A TRIP RELAY OPTD.	21M1	-	х	-	-	SPS
154	CARRIER HEALTHY CHANNEL-1	21M1	_	X	-	-	SPS
155	CARRIER RECEIVED CHANNEL-1	21M1	-	X	-	-	SPS
	CARRIER RECEIVED CHANNEL-2	21M1	-	X	-	-	SPS
157	CARRIER CHANNEL-1 OUT OF SERVICE	21M1	_	X	-	-	SPS
	CARRIER CHANNEL-2 OUT OF SERVICE	21M1	_	X	_	-	SPS
	DIRECT TRIP RECEIVED CHANNEL-1	21M1	_	X	-	_	SPS
160	CARRIER HEALTHY CHANNEL-2	21M1	_	X	_	_	SPS
161	DIRECT TRIP RECEIVED CHANNEL-2	21M1	_	X	_	_	SPS
162	CB CLOSE COMMAND	21M1	_	X	_	_	SPS
163	GROUP-A TRIP RELAY 86A SUPERVISION	21M1	_	X	_	-	SPS
164	BUSBAR PROTN. OPTD	21M1	_	X	_	_	SPS
_	LBB PROTN. OPTD	21M1	_	X	_	-	SPS
	DISTANCE PROTECTION OPERATED	21M1		X	_	_	SPS
167	ZONE-1 R-PH TRIP	21M1	_	X	_	_	SPS
_	ZONE-2 R-PH TRIP	21M1	_	X	_	_	SPS
169	ZONE-3 R-PH TRIP	21M1	<del>-</del>	X	_	-	SPS
170	ZONE-4 R-PH TRIP	21M1	-	X	_	_	SPS
	DIRECTIONAL EARTHFAULT	21M1	_	X	_	_	SPS
172	OVERVOLTAGE OPERATED	21M1 21M1	<del>                                     </del>	X	-	-	SPS
173	SOTF OPERATED	21M1	-	X	_		SPS
	AR OPERATED	21M1	<del>-</del>	X	_	_	SPS
175	CARRIER HEALTHY CHANNEL-2	21M2	<u> </u>	X	-	_	SPS
	GROUP-B TRIP RELAY OPTD.	21M2	-	X	_	_	SPS
	B/B PU RELAY FAULTY	21M2	<del>                                     </del>	X	-	_	SPS
	MAIN-I RELAY FAULTY	21M2	-	X	-	-	SPS
	A/R OPTD. FROM BCU	21M2	<del>                                     </del>	X	-	-	SPS
	TRIP RELAY 86B SUPERVISION	21M2	<del>-</del>	X	-	_	SPS
	DC-1 FAIL	21M2 21M2	<del>-</del>	X	-	-	SPS
181	ZONE-1 R-PH TRIP	21M2 21M2	+ -	X	-	-	SPS
	ZONE-1 R-PH TRIP ZONE-2 R-PH TRIP	21M2 21M2	-	X	-	-	SPS
183 184	ZONE-2 K-PH TRIP ZONE-3 R-PH TRIP	21M2 21M2	-	X	-	-	SPS
			-		-	-	
185	ZONE-4 R-PH TRIP	21M2	_	X			SPS
	DIRECTIONAL EARTHFAULT	21M2	-	X	-	-	SPS
187 188	OVERVOLTAGE OPERATED	21M2	-	X	-	-	SPS
IXX	SOTF OPERATED	21M2	1 -	X	-	I -	SPS

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	220kV KATHALGURI LIN	IE-2	ı				1
s.no.	SIGNAL DESCRIPTION	IED	DI(Us and)		RFACE		DATATYPE
1	CB-R-PHASE OPEN	BCU	DI(Hard) X	DI(Soft)	DO -	AI -	
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	DPS
3	CB-Y-PHASE OPEN	BCU	Х	-	-	-	DPS
4	CB-Y-PHASE CLOSED	BCU	Х	-	-	-	T DP3
	CB-B-PHASE OPEN	BCU	Х	-	-	-	DPS
	CB-B-PHASE CLOSED	BCU	Х	- V	-	-	DDC
7 8	CB POSITION DISCONNECTOR 89A OPEN	BCU BCU	- X	X -	-	-	DPS
_	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	DPS
	DISCONNECTOR 89B OPEN	BCU	Х	-	-	-	DPS
	DISCONNECTOR 89B CLOSE	BCU	Х	-	-	-	DP3
	DISCONNECTOR 89L OPEN	BCU	Х	-	-	-	DPS
	DISCONNECTOR 89L CLOSE	BCU	X	-	-	-	
_	EARTH SWITCH ESA OPEN  EARTH SWITCH ESA CLOSE	BCU BCU	X	-	-	-	DPS
_	EARTH SWITCH ESB OPEN	BCU	X	-	-	-	
	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
18	EARTH SWITCH 89LE OPEN	BCU	Х	-	-	-	DPS
	EARTH SWITCH 89LE CLOSE	BCU	Х	-	-	-	
_	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21 22	CB SPRING EXCESSIVE RUNTIME(Y-PH)  CB SPRING EXCESSIVE RUNTIME(R.DH)	BCU	X	-	-	-	SPS
	CB SPRING EXCESSIVE RUNTIME(B-PH) CB MOTOR FAIL(R-PH)	BCU BCU	X	-	-	-	SPS SPS
	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
_	CB MOTOR FAIL(B-PH)	BCU	Х	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	Х	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	Х	-	-	-	SPS
	CB SPRING CHARGED(B-PH)	BCU	Х	-	-	-	SPS
	POLE DISCREPANCY OPTD-1	BCU	X	-	-	-	SPS
_	POLE DISCREPANCY OPTD-2 CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(R PH)	BCU BCU	X	-	-	-	SPS SPS
	CB COMP. GD1 GAS PRESSURE LOW 1ST STAGE ALARM -(Y PH)	BCU	X	-	-	-	SPS
	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	Х	-	-	-	SPS
35	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	Х	-	-	-	SPS
	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 BCU	X	-	-	-	SPS SPS
38 39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)  CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
_	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	Х	-	-	-	SPS
42	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	Х	-	-	-	SPS
43	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
44	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
	89A DISCONNECTOR COMP.GD2 GAS PRESSURE LOW 1ST STAGE -(B PH) 89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU BCU	X	-	-	-	SPS SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -{R,Y,B PH}	BCU	X	-	-		SPS
	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
_	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
_	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)  ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU BCU	X	-	-	-	SPS SPS
	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 151 STAGE -(1 PH)	BCU	X	-	-	-	SPS
	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
	BUFFER COMP. GD5 GAS PRESSURE LOWIST STAGE -(Y PH)	BCU	X	-	-	-	SPS
	BUFFER COMP. GD5 GAS PRESSURE LOW 3ND STAGE -(B PH)	BCU	X	-	-	-	SPS
61 62	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH) BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU BCU	X	-	-	-	SPS 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	Х			-	SPS
66	CTA/89L/ESB/89LE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	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	Х	-	_	-	SPS

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	220kV KATHALGURI LIN	IE-2					
S.NO.	SIGNAL DESCRIPTION	IED		INTE	RFACE		DATATYPE
			DI(Hard)	DI(Soft)	DO	Al	
	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(BPH)	BCU	X	-	-	-	SPS
71	GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)  GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
72 73	GAB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)  GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU BCU	X	-	-	-	SPS SPS
74	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(K PH)	BCU	X	-	-	-	SPS
	GAB COMP. GD8 GAS PRESSURE LOW 151 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	Х	-	-	-	SPS
78	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
79	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
	MAIN BUS-I GD13 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
	MAIN BUS-I GD13 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
_	MAIN BUS-I GD13 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS SPS
	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(Y PH)  MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU BCU	X	-	-	-	SPS
_	MAIN BUS-II GD14 GAS PRESSURE LOW 1ST STAGE -(B PH)  MAIN BUS-II GD14 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-		SPS
_	MAIN BUS-II GD14 GASPRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	_	-	SPS
	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
	N/M SWITCH IN MAINTENACE MODE	BCU	X	-	-	-	SPS
	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
92	DC-2 SUPPLY FAIL	BCU	Х	-	-	-	SPS
93	DCDB-1 SUPPLY FAIL	BCU	Х	-	-	-	SPS
94	DCDB-2 SUPPLY FAIL	BCU	Х	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	Х	-	-	-	SPS
	AUTORECLOSE L/ORELAY OPTD.	BCU	Х	-	-	-	SPS
	AUTORECLOSE BLOCK	BCU	Х	-	-	-	SPS
	A/R INITIATIONR-PH	BCU	Х	-	-	-	SPS
	A/R INITIATIONY-PH	BCU	X	-	-	-	SPS
_	A/R INITIATIONB-PH	BCU	X	-	-	-	SPS
	CB TC-1 FAULTY DC SOURCE-2 FAIL	BCU BCU	X	-	-	-	SPS SPS
_	CARRIER SPEECH CHANNELFAIL	BCU	X	-	-	-	SPS
	CB TC-2 FAULTY	BCU	X	_	_	_	SPS
_	DIRECT TRIP SEND CH-1 ALARM	BCU	X	-	-	-	SPS
	DIRECT TRIP SEND CH-2 ALARM	BCU	X	-	-	-	SPS
	MANUAL CB OPENALARM	BCU	Х	-	-	-	SPS
108	MANUAL CB CLOSEALARM	BCU	Х	-	-	-	SPS
109	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	Х	-	SPC
110	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	Х	-	SPC
	AUTO RECLOSE	BCU	-	-	Х	-	SPC
	CB TRIP COMMANDTC TC-1	BCU	-	-	Х	-	SPC
	CB TRIP COMMANDTC TC-2	BCU	-	-	Х	-	SPC
	TRIP RELAY 86A RESET	BCU	-	-	X	-	SPC
	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
	TO 21M2 MAIN A/R OPTD BCU FAULTY TO A/R LOCKOUT RELAY	BCU BCU	-	-	X	-	SPC SPC
	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	
	DISCONNECTOR 89A CEOSE COMINIAND  DISCONNECTOR 89A OPEN COMMAND	BCU	<del>-</del>	-	X	<del></del>	DPC
	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	X	-	
	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	X	-	DPC
	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	X	-	D20
	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	Х	-	DPC
124	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	Х	-	DPC
125	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	Х	-	DPC
	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	Х	-	DPC
_	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	Х	-	
	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	Х	-	DPC
	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	
	A/R LOCKOUT TRIP	BCU	-	-	X	-	SPC
	MANUAL TRIP TO DT SEND CH-1 CKT	BCU	-	-	X	-	SPC
	MANUAL TRIP TO DT SEND CH-2 CKT	BCU	-	-	X	-	SPC
	CB CLOSE COMMAND TO 21M1 FOR SOTF INI	BCU	-	-	X	-	SPC
	CB CLOSE COMMAND TO 21M2 FOR SOTF INI	BCU	-	-	X	-	SPC
	POLE DISCREPANCY -1 RESET POLE DISCREPANCY -2 RESET	BCU BCU	-	-	X	-	SPC SPC
_	A/R LOCKOUT RELAY RESET	BCU	-	-	X	-	SPC
	A/R OFF	BCU	-	-	X	<u> </u>	SPC
-50	r y · · · · ·	1 500	1	1		1	J 31 C

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	220kV KATHALGURI LIN				RFACE		
S.NO.	SIGNAL DESCRIPTION	IED			DATATYPE		
0	5.6.1.1.2.2.3.111 113.11		DI(Hard)	DI(Soft)	DO	Al	DATE:
139	R PHASE VOLTAGE	BCU	-	-	-	Х	MV
140	B PHASE VOLTAGE	BCU	-	-	-	Х	MV
141	Y PHASE VOLTAGE	BCU	-	-	-	Х	MV
142	R PHASE CURRENT	BCU	-	-	-	х	MV
143	B PHASE CURRENT	BCU	-	-	-	Х	MV
144	Y PHASE CURRENT	BCU	-	-	-	Х	MV
145	RB LINE VOLTAGE	BCU	-	-	-	Х	MV
146	BY LINE VOLTAGE	BCU	-	-	-	Х	MV
147	YR LINE VOLTAGE	BCU	-	-	-	Х	MV
148	FREQUENCY	BCU	-	-	-	Х	MV
149	ACTIVE POWER	BCU	-	-	-	Х	MV
150	REACTIVE POWER	BCU	-	-	-	Х	MV
151	APPARENT POWER	BCU	_	-	-	Х	MV
152	POWER FACTOR	BCU	-	-	-	Х	MV
153	GROUP-A TRIP RELAY OPTD.	21M1	_	х	-	-	SPS
154	CARRIER HEALTHY CHANNEL-1	21M1	-	Х	-	-	SPS
155	CARRIER RECEIVED CHANNEL-1	21M1	_	X	_	_	SPS
156	CARRIER RECEIVED CHANNEL-2	21M1	-	X	-	-	SPS
157	CARRIER CHANNEL-1 OUT OF SERVICE	21M1	_	X	_	_	SPS
158	CARRIER CHANNEL-2 OUT OF SERVICE	21M1	_	X	_	_	SPS
159	DIRECT TRIP RECEIVED CHANNEL-1	21M1	_	X	_	_	SPS
160	CARRIER HEALTHY CHANNEL-2	21M1	_	X	_	_	SPS
161	DIRECT TRIP RECEIVED CHANNEL-2	21M1	_	X	_		SPS
162	CB CLOSE COMMAND	21M1	_	X	_	_	SPS
163	GROUP-A TRIP RELAY 86A SUPERVISION	21M1		X	_	_	SPS
164	BUSBAR PROTN. OPTD	21M1	_	X	_		SPS
165	LBB PROTN. OPTD	21M1	-	X	-		SPS
166	DISTANCE PROTECTION OPERATED	21M1	-	X	-	-	SPS
167	ZONE-1 R-PH TRIP	21M1 21M1	-	X	-	-	SPS
		1	-	X	-	-	SPS
168	ZONE 2 R-PH TRIP	21M1 21M1	-				
169	ZONE-3 R-PH TRIP		-	X	-	-	SPS
170	ZONE-4 R-PH TRIP	21M1		X		-	SPS
171	DIRECTIONAL EARTHFAULT	21M1	-		-		SPS
172	OVERVOLTAGE OPERATED	21M1	-	X	-	-	SPS
173	SOTF OPERATED	21M1	-	X	-	-	SPS
174	AR OPERATED	21M1	-	X	-	-	SPS
175	CARRIER HEALTHY CHANNEL-2	21M2	-	X	-	-	SPS
176	GROUP-B TRIP RELAY OPTD.	21M2	-	Х	-	-	SPS
177	B/B PU RELAY FAULTY	21M2	-	Х	-	-	SPS
178	MAIN-I RELAY FAULTY	21M2	-	Х	-	-	SPS
179	A/R OPTD. FROM BCU	21M2	-	Х	-	-	SPS
180	TRIP RELAY 86B SUPERVISION	21M2	-	Х	-	-	SPS
181	DC-1 FAIL	21M2	-	Х	-	-	SPS
182	ZONE-1 R-PH TRIP	21M2	-	Х	-	-	SPS
183	ZONE-2 R-PH TRIP	21M2	-	Х	-	-	SPS
184	ZONE-3 R-PH TRIP	21M2	-	Х	-	-	SPS
185	ZONE-4 R-PH TRIP	21M2	-	Х	-	-	SPS
186	DIRECTIONAL EARTHFAULT	21M2	-	Х	-	-	SPS
187	OVERVOLTAGE OPERATED	21M2	-	Х	-	-	SPS
188	SOTF OPERATED	21M2	-	Х	-	-	SPS
189	UNDERVOLTAGE OPERATED	21M2	-	Х	-	-	SPS

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	220kV TRANSFORMER-S	1			25465		
s.no.	SIGNAL DESCRIPTION	IED	DI(U=I)		RFACE		DATATYPE
1	CB-R-PHASE OPEN	BCU	DI(Hard) X	DI(Soft)	DO -	AI -	+
	CB-R-PHASE CLOSED	BCU	X	-	-	-	DPS
	CB-Y-PHASE OPEN	BCU	Х	-	-	-	DPS
	CB-Y-PHASE CLOSED	BCU	Х	-	-	-	T DP3
	CB-B-PHASE OPEN	BCU	Х	-	-	-	DPS
-	CB-B-PHASE CLOSED	BCU	Х	- V	-	-	DDC
-	CB POSITION DISCONNECTOR 89A OPEN	BCU BCU	- X	X -	-	-	DPS
-	DISCONNECTOR 89A CLOSE	BCU	X	-	-	-	DPS
	DISCONNECTOR 89B OPEN	BCU	Х	-	-	-	DPS
11	DISCONNECTOR 89B CLOSE	BCU	Х	-	-	-	T DP3
-	DISCONNECTOR 89T OPEN	BCU	Х	-	-	-	DPS
-	DISCONNECTOR 89T CLOSE	BCU	X	-	-	-	
-	EARTH SWITCH ESA OPEN  EARTH SWITCH ESA CLOSE	BCU BCU	X	-	-	-	DPS
	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	+
-	EARTH SWITCH ESB CLOSE	BCU	X	-	-	-	DPS
_	EARTH SWITCH 89TE OPEN	BCU	Х	-	-	-	DDC
-	EARTH SWITCH 89TE CLOSE	BCU	Х	-	-	-	DPS
	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	Х	-	-	-	SPS
-	CB SPRING EXCESSIVERUNTIME(Y-PH)	BCU	X	-	-	-	SPS
	CB SPRING EXCESSIVERUNTIME(B-PH)  CB MOTOR FAIL(R-PH)	BCU BCU	X	-	-	-	SPS SPS
-	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
	CB MOTOR FAIL(B-PH)	BCU	X	_	_	_	SPS
-	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	Х	-	-	-	SPS
-	CB SPRING CHARGED(B-PH)	BCU	Х	-	-	-	SPS
	POLE DISCREPANCY OPTD1	BCU	Х	-	-	-	SPS
	POLE DISCREPANCY OPTD2	BCU	X	-	-	-	SPS
	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(R PH)  CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(Y PH)	BCU BCU	X	-	-	-	SPS SPS
	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(1 PH)  CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(B PH)	BCU	X	-	-		SPS
-	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	X	-	-	-	SPS
-	B COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	Х	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	Х	-	-	-	SPS
	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	Х	-	-	-	SPS
	CB COMP. GD1 GAS PRESSURELOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)  CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU BCU	X	-	-	-	SPS SPS
_	CB COMP. GD1 GAS PRESSURE LOW 41H STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
-	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	X	-	-	-	SPS
-	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
44	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) 89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW1ST STAGE-(R PH)	BCU BCU	X	-	-	-	SPS SPS
	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
-	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(1 PH)	BCU	X	-	-	-	SPS
-	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
-	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
-	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)  ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU BCU	X	-	-	-	SPS SPS
-	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)  ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
-	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
-	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE-(Y PH)  CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU BCU	X	-	-	-	SPS SPS
-	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 151 STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
-	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х		-	_	SPS
69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х		ı ———	ı ———	SPS

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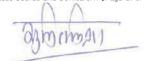




71 (72 (73 (74 (75 (75 (75 (75 (75 (75 (75 (75 (75 (75	SIGNAL DESCRIPTION  GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(B PH)  GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)  GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)  GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU BCU	DI(Hard)	INTEI DI(Soft)	RFACE DO	Al	DATATYPE
71 (72 (73 (74 (75 (75 (75 (75 (75 (75 (75 (75 (75 (75	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH) GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) GAS PRESSURE LOW 1ST STAGE -(R PH)			υι(50π)	00	l Ai	
71 (72 (73 (74 (75 (75 (75 (75 (75 (75 (75 (75 (75 (75	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH) GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) GAS PRESSURE LOW 1ST STAGE -(R PH)			_	_		SPS
72 0 73 0 74 0 75 0 76 0 77 0 78 1 79 1 80 81	GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH) GAS PRESSURE LOW 1ST STAGE -(R PH)		X	-	-	-	SPS
73 (74 (75 (76 (77 (78 (79 (79 (79 (79 (79 (79 (79 (79 (79 (79	GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
75 (76 (77 (78 ) 79 (80 ) 81 (81 )	CAR COMP CRO CAC PRESSURE LOWAST STACE (V. DU)	BCU	Х	-	-	-	SPS
76 (77 (78 ) 79 (80 ) 81 (81	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
77 (78   79   80   81	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
78   79   80   81	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
79   80   81	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
80 81	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
81	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(Y PH)  MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU BCU	X	-	-	-	SPS SPS
-	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R.Y.B PH)  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
	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	х	-	-	-	SPS
85	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	х	-	-	-	SPS
86	MAIN BUS-II GD16 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
87 I	MAIN BUS-II GD16 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
	L/R SWITCH IN LOCAL MODE	BCU	X	-	-	-	SPS
	N/M SWITCH IN MAINTENACE MODE	BCU	X	-	-	-	SPS
	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	-	SPS
	DC-1 SUPPLY FAIL  DC-2 SUPPLY FAIL	BCU BCU	X	-	-	-	SPS SPS
	DCDB-2 SUPPLY FAIL	BCU	X	-	-	-	SPS
	DCDB-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	Х	-	-	-	SPS
96	DC-1 FAIL	BCU	х	-	-	-	SPS
97 I	DC SOURCE-2 FAIL	BCU	Х	-	-	-	SPS
98	IV BAY IN TRANSFER MODE	BCU	Х	-	-	-	SPS
	CB TC-1 FAULTY	BCU	X	-	-	-	SPS
	CB TC-2 FAULTY	BCU	X	-	-	-	SPS
	MANUAL CR CLOSSALARM	BCU	X	-	-	-	SPS
	MANUAL CB CLOSEALARM  IRF-67	BCU BCU	X	-	-	-	SPS SPS
	IRF-PU	BCU	X	-	-	-	SPS
	CB CLOSE COMMAND TO B/B MAIN-1 PU	BCU	-	-	Х	-	SPC
106	CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	Х	-	SPC
107	CB TRIP COMMANDTC TC-1	BCU	-	-	Х	-	SPC
108	CB TRIP COMMANDTC TC-2	BCU	-	-	Х	-	SPC
	TRIP RELAY 86A RESET	BCU	-	-	Х	-	SPC
	TRIP RELAY 86B RESET	BCU	-	-	X	-	SPC
	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	X	-	DPC
	DISCONNECTOR 89A OPEN COMMAND DISCONNECTOR 89B CLOSE COMMAND	BCU BCU	-	-	X	-	
	DISCONNECTOR 89B CEOSE COMMAND	BCU	+ :	-	X	-	DPC
	DISCONNECTOR 89L CLOSE COMMAND	BCU	_	_	X	_	
	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	X	-	DPC
	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	Х	-	DPC
118	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	Х	-	DPC
	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	Х	-	DPC
_	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	Х	-	1 5.0
	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	X	-	DPC
	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	CDC
	POLE DISCREPANCY -1 RESET	BCU	-	-	X	-	SPC SPC
	POLE DISCREPANCY -2 RESET  OLTC RAISE	BCU BCU	-	-	X	-	SPC
-	OLTC LOWER	BCU	+ -	-	X	-	SPC
	75A SELECT	BCU	-	-	X	-	SPC
	75A DESELECT	BCU	-	-	X	-	SPC
-	75B SELECT	BCU	-	-	Х	-	SPC
130	75B DESELECT	BCU	-	-	Х	-	SPC
	R PHASE VOLTAGE	BCU	-	-	-	Х	MV
	B PHASE VOLTAGE	BCU	-	-	-	Х	MV
	Y PHASE VOLTAGE	BCU	-	-	-	X	MV
	R PHASE CURRENT	BCU	-	-	-	X	MV
	B PHASE CURRENT	BCU	-	-	-	X	MV
	Y PHASE CURRENT RB LINE VOLTAGE	BCU BCU	-	-	-	X X	MV
	BY LINE VOLTAGE	BCU	-	-	-	X	MV

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

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S.NO.	SIGNAL DESCRIPTION	IED		INTE	RFACE		DATATYPE
			DI(Hard)	DI(Soft)	DO	Al	DATATTE
2	CB-R-PHASE OPEN  CB-R-PHASE CLOSED	BCU BCU	X	-	-	-	DPS
3	CB-Y-PHASE OPEN	BCU	X	-	-	-	
4	CB-Y-PHASE CLOSED	BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	Х	-	-	-	DPS
6	CB-B-PHASE CLOSED	BCU	Х	-	-	-	DPS
7	CB POSITION	BCU	-	Х	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	X	-	-	-	DPS
9	DISCONNECTOR 89A CLOSE DISCONNECTOR 89B OPEN	BCU BCU	X	-	-	-	
11	DISCONNECTOR 89B CLOSE	BCU	X	-	-	-	DPS
12	DISCONNECTOR 89T OPEN	BCU	Х	-	-	-	DPS
13	DISCONNECTOR 89T CLOSE	BCU	Х	-	-	-	DP3
14	EARTH SWITCH ESA OPEN	BCU	Х	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	
16 17	EARTH SWITCH ESB OPEN	BCU BCU	X	-	-	-	DPS
18	EARTH SWITCH ESB CLOSE EARTH SWITCH 89TE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89TE CLOSE	BCU	X	-	-	-	DPS
	CB SPRING EXCESSIVE RUNTIME(R-PH)	BCU	X	-	-	-	SPS
21	CB SPRING EXCESSIVERUNTIME(Y-PH)	BCU	Х	-	-	-	SPS
22	CB SPRING EXCESSIVERUNTIME(B-PH)	BCU	Х	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	X	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	X	-	-	-	SPS
25 26	CB MOTOR FAIL(B-PH)  CB SPRING CHARGED(R-PH)	BCU BCU	X	-	-	-	SPS SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28	CB SPRING CHARGED(F-FH)	BCU	X	-	-	-	SPS
29	POLE DISCREPANCY OPTD1	BCU	Х	-	-	-	SPS
30	POLE DISCREPANCY OPTD2	BCU	Х	-	-	-	SPS
31	CB COMP. GD1 GAS PRESSURELOW 1ST STAGE ALARM -(R PH)	BCU	Х	-	-	-	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 35	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)  B COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU BCU	X	-	-	-	SPS SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(1 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	Х	-	-	-	SPS
39	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	Х	-	-	-	SPS
40	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU	Х	-	-	-	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)  89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU BCU	X	-	-	-	SPS SPS
44	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(N PH)	BCU	X	<del>                                     </del>	-	-	SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW1ST STAGE-(R PH)	BCU	Х	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	X	-	-	-	SPS
50 51	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU BCU	X	-	-	-	SPS SPS
52	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH) 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	Х	-	-	-	SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
56	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	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 60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(Y PH) BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU BCU	X	-	-	-	SPS 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	Х	-	-	-	SPS
65	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
66	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	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	Х	-	-	-	SPS

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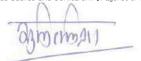




S.NO.	SIGNAL DESCRIPTION	IED			RFACE		DATATYPE
			DI(Hard)	DI(Soft)	DO	Al	
	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	-	-	SPS
	GIB COMP. GD7 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)  GIB COMP. GD7 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU BCU	X	-	-	-	SPS SPS
	GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	1 x	-	-	-	SPS
	GAB COMP. GD8 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	X	-	_	_	SPS
	GAB COMP. GD8 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	GAB COMP. GD8 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
78	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	SPS
	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	SPS
	MAIN BUS-I GD15 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
	MAIN BUS-I GD15 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	MAIN BUS-I GD15 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	X	-	-	-	SPS
	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU BCU	X	-	-	-	SPS SPS
	MAIN BUS-II GD16 GAS PRESSURE LOW 1ST STAGE -(B PH)  MAIN BUS-II GD16 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	X	-	-	-	SPS
	MAIN BUS-II GD16 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	T X				SPS
	L/R SWITCH IN LOCAL MODE	BCU	X	-	_		SPS
	N/M SWITCH IN MAINTENACE MODE	BCU	T X	-	-	-	SPS
	N/M SWITCH IN NORMAL MODE	BCU	X	-	-	_	SPS
	DC-1 SUPPLY FAIL	BCU	X	-	-	-	SPS
_	DC-2 SUPPLY FAIL	BCU	X	-		-	SPS
	DCDB-2 SUPPLY FAIL	BCU	х	-	-	-	SPS
94	DCDB-1 SUPPLY FAIL	BCU	Х	-	-	-	SPS
95	DS/ES ABNORMAL CIRCUIT SUPERVISION STATUS	BCU	Х	-	-	-	SPS
96	DC-1 FAIL	BCU	Х	-	-	-	SPS
97	DC SOURCE-2 FAIL	BCU	Х	-	-	-	SPS
	IV BAY IN TRANSFER MODE	BCU	Х	-	-	-	SPS
	CB TC-1 FAULTY	BCU	Х	-	-	-	SPS
	CB TC-2 FAULTY	BCU	Х	-	-	-	SPS
	MANUAL CB OPENALARM	BCU	Х	-	-	-	SPS
	MANUAL CB CLOSEALARM	BCU	X	-	-	-	SPS
	IRF-67	BCU	X	-	-	-	SPS
	IRF-PU	BCU BCU	- X	-		-	SPS SPC
	CB CLOSE COMMAND TO B/B MAIN-1 PU CB CLOSE COMMAND TO CLOSING CKT	BCU	-	-	X X	-	SPC
	CB TRIP COMMANDTC TC-1	BCU	-	-	X	-	SPC
	CB TRIP COMMANDTC TC-2	BCU		-	X		SPC
	TRIP RELAY 86A RESET	BCU	_	-	X	_	SPC
	TRIP RELAY 86B RESET	BCU	_	-	X	-	SPC
	DISCONNECTOR 89A CLOSE COMMAND	BCU	-	-	х	-	
112	DISCONNECTOR 89A OPEN COMMAND	BCU	-	-	х	-	DPC
113	DISCONNECTOR 89B CLOSE COMMAND	BCU	-	-	Х	-	DPC
114	DISCONNECTOR 89B OPEN COMMAND	BCU	-	-	Х	-	] DPC
115	DISCONNECTOR 89L CLOSE COMMAND	BCU	-	-	Х	-	DPC
	DISCONNECTOR 89L OPEN COMMAND	BCU	-	-	Х	-	1
	EARTH SWITCH ESA OPEN COMMAND	BCU	-	-	Х	-	DPC
	EARTH SWITCH ESA CLOSE COMMAND	BCU	-	-	Х		+
	EARTH SWITCH ESB OPEN COMMAND	BCU	-	-	X	-	DPC
	EARTH SWITCH ESB CLOSE COMMAND	BCU	-	-	X	-	
	EARTH SWITCH 89ESL OPEN COMMAND	BCU	-	-	X	-	DPC
	EARTH SWITCH 89ESL CLOSE COMMAND	BCU	-	-	X	-	
	POLE DISCREPANCY -1 RESET POLE DISCREPANCY -2 RESET	BCU BCU	-	-	X	-	SPC SPC
	OLTC RAISE	BCU	-	-	X	-	SPC
	OLTC LOWER	BCU	-	-	X	-	SPC
	75A SELECT	BCU	-	-	X	-	SPC
	75A DESELECT	BCU	-	-	X	-	SPC
	75B SELECT	BCU	-	-	X	-	SPC
	75B DESELECT	BCU	-	-	X	-	SPC
	R PHASE VOLTAGE	BCU	-	-	-	х	MV
	B PHASE VOLTAGE	BCU	-	-	-	X	MV
	Y PHASE VOLTAGE	BCU	-	-	-	Х	MV
	R PHASE CURRENT	BCU	-	-	-	х	MV
	B PHASE CURRENT	BCU	-	-	-	Х	MV
	Y PHASE CURRENT	BCU	-	-	-	Х	MV
137	RB LINE VOLTAGE	BCU	-	-	-	х	MV
	•	BCU	_	-	-	Х	MV

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

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S.NO.	SIGNAL DESCRIPTION	IED		INTE	RFACE		DATATYPE
3.110.	SIGNAL DESCRIPTION	ILD.	DI(Hard)	DI(Soft)	DO	Al	DAIAIIFE
1	CB-R-PHASE OPEN	BCU	Х	-	-	-	DPS
2	CB-R-PHASE CLOSED	BCU	X	-	-	-	
3 4	CB-Y-PHASE OPEN  CB-Y-PHASE CLOSED	BCU BCU	X	-	-	-	DPS
5	CB-B-PHASE OPEN	BCU	X	-	-	-	
6	CB-B-PHASE CLOSED	BCU	X	-	-	-	DPS
7	CB POSITION	BCU	-	Х	-	-	DPS
8	DISCONNECTOR 89A OPEN	BCU	х	-	-	-	
9	DISCONNECTOR 89A CLOSE	BCU	Х	-	-	-	DPS
10	DISCONNECTOR 89B OPEN	BCU	Х	-	-	-	DPS
11	DISCONNECTOR 89B CLOSE	BCU	Х	-	-	-	DF3
12	DISCONNECTOR 89T OPEN	BCU	Х	-	-	-	DPS
13	DISCONNECTOR 89T CLOSE	BCU	Х	-	-	-	1
14	EARTH SWITCH ESA OPEN	BCU	X	-	-	-	DPS
15	EARTH SWITCH ESA CLOSE	BCU	X	-	-	-	+
16 17	EARTH SWITCH ESB OPEN  EARTH SWITCH ESB CLOSE	BCU BCU	X	-	-	-	DPS
18	EARTH SWITCH 89TE OPEN	BCU	X	-	-	-	
19	EARTH SWITCH 89TE CLOSE	BCU	X	-	-	-	DPS
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	Х	-	-	-	SPS
23	CB MOTOR FAIL(R-PH)	BCU	Х	-	-	-	SPS
24	CB MOTOR FAIL(Y-PH)	BCU	Х	-	-	-	SPS
25	CB MOTOR FAIL(B-PH)	BCU	Х	-	-	-	SPS
26	CB SPRING CHARGED(R-PH)	BCU	X	-	-	-	SPS
27	CB SPRING CHARGED(Y-PH)	BCU	X	-	-	-	SPS
28 29	CB SPRING CHARGED(B-PH) POLE DISCREPANCY OPTD1	BCU BCU	X	-	-	-	SPS SPS
30	POLE DISCREPANCY OPTD2	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	Х	-	-	-	SPS
34	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(R PH)	BCU	Х	-	-	-	SPS
35	B COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(Y PH)	BCU	Х	-	-	-	SPS
36	CB COMP. GD1 GAS PRESSURE LOW 2ND STAGE ALARM -(B PH)	BCU	Х	-	-	-	SPS
37	CB COMP. GD1 GAS PRESSURE LOW 3RD STAGE ALARM -(R,Y,B, PH)	BCU	Х	-	-	-	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 41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH)	BCU BCU	X	-	-	-	SPS SPS
41	CB COMP. GD1 GAS PRESSURE LOW 4TH STAGE ALARM -(R,Y,B, PH) 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	Х	-	-	-	SPS
47	89A DISCONNECTOR COMP. GD2 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
48	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW1ST STAGE-(R PH)	BCU	Х	-	-	-	SPS
49	89B DISCONNECTOR COMP. GD3 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU	Х	-	-	-	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 54	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(R PH)  ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 1ST STAGE -(Y PH)	BCU BCU	X	-	-	-	SPS SPS
55	ESA DISCONNECTOR COMP. GD4 GAS PRESSURE LOW 151 STAGE -(1 PH)  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	Х	-	-	-	SPS
60	BUFFER COMP. GD5 GAS PRESSURE LOW 1ST STAGE -(B PH)	BCU	Х	-	-	-	SPS
61	BUFFER COMP. GD5 GAS PRESSURE LOW 2ND STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
62	BUFFER COMP. GD5 GAS PRESSURE LOW 3RD STAGE -(R,Y,B PH)	BCU	Х	-	-	-	SPS
63	CTA/89T/ESB/89TE SWITCH COMP. GD6 GAS PRESSURE LOW 1ST STAGE -(R PH)	BCU	Х	-	-	-	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 BCU	X	-	-	-	SPS SPS
68 69	GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE-(R PH) GIB COMP. GD7 GAS PRESSURE LOW 1ST STAGE-(Y PH)	BCU	X	-	-	-	SPS
03	TOTAL COMIT. GOT GAS FIRESSORE LOW 131 STAGE-(1 FR)	I PCO	_ ^				J 3F3

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