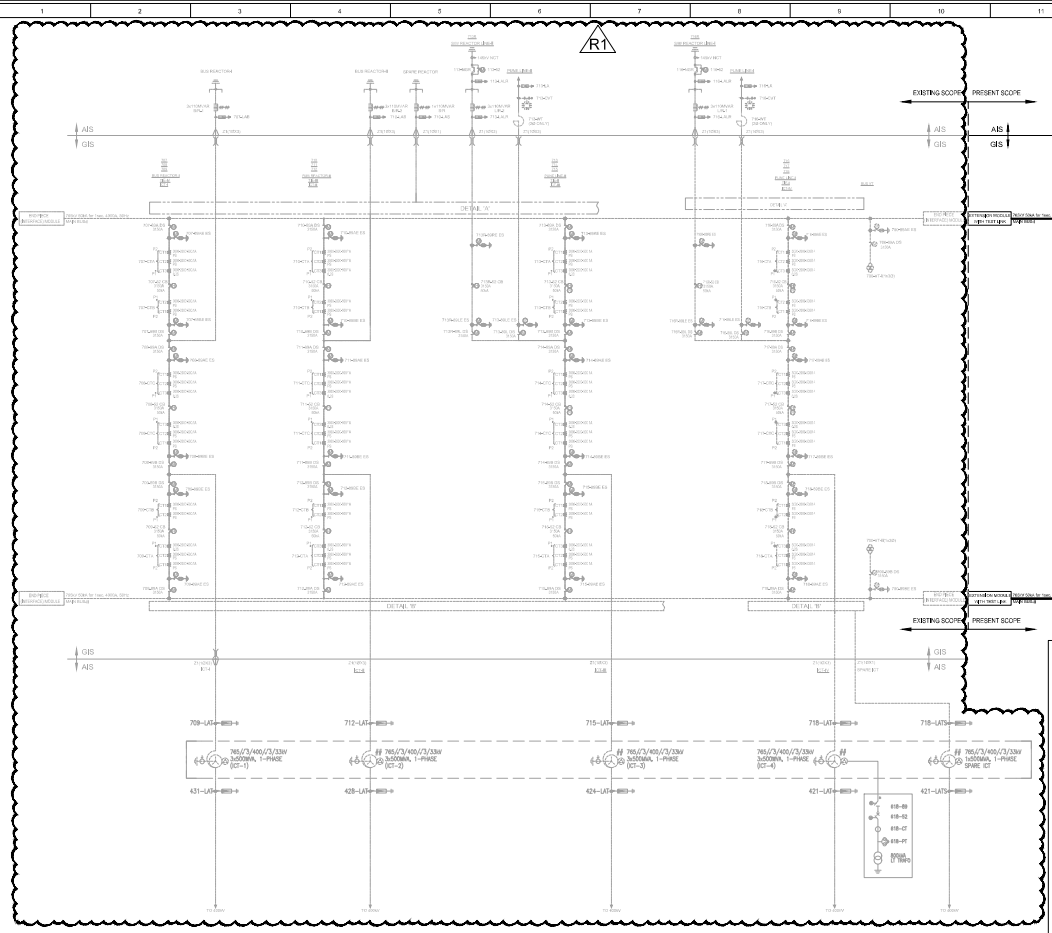
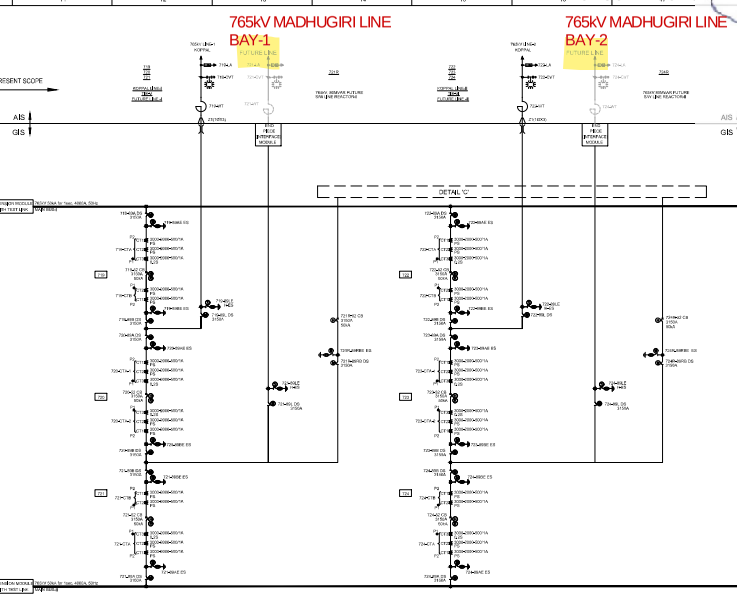
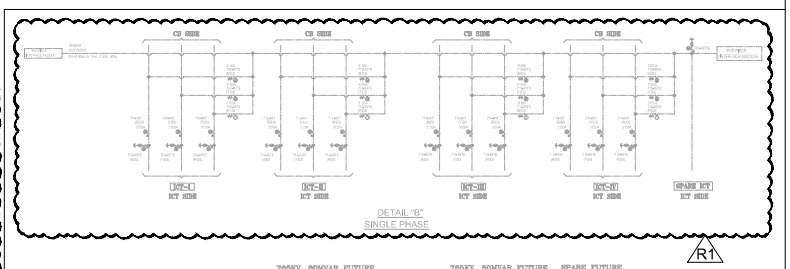
TB202362-100236I-SS1227-SLD/01/CAT-I/Page: 1 of 1

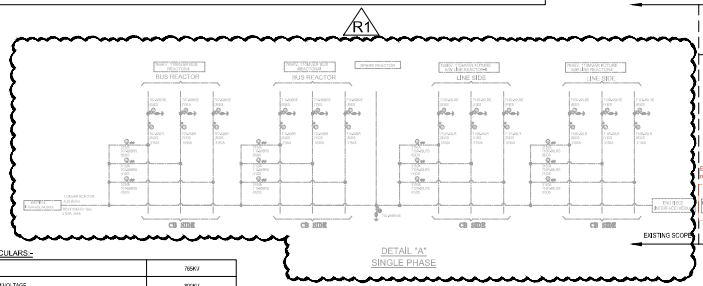
765kV MADHUGIRI LINE BAY-1

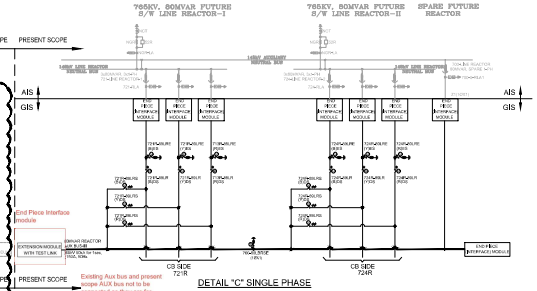
765kV MADHUGIRI LINE BAY-2











LEGEND

SYMBOL	DEVICE NO.	DESCRIPTION	OPERATION TYPE	BPS QUANTITY	ACTUAL QUANTITY
	719,720,721,722,723,724	CIRCUIT BREAKER WITH PIR & WITHOUT CONTROL SWITCHING DEVICE	HYDRAULIC, MANUAL	6 (1-PHASE)	6 (1-PHASE)
	721R,724R	CIRCUIT BREAKER WITHOUT PIR & WITH CONTROL SWITCHING DEVICE	HYDRAULIC, MANUAL	2 (1-PHASE)	2 (1-PHASE)
	715,720,721,722,723,724-89AM/BB 719,721,722,724-89B 721R,724R-89RB	DISCONNECTING SWITCH	MOTOR DRIVEN, MANUAL	18 (1-PHASE)	18 (1-PHASE)
	721R,724R-89LR	DISCONNECTING SWITCH (SINGLE PHASE OPERATION)	MOTOR DRIVEN, MANUAL	6 (1-PHASE)	6 (1-PHASE)
	721R,724R-89LRS	DISCONNECTING SWITCH WITHSTAND PHASE TO PHASE INSULATION (SINGLE PHASE OPERATION)	MOTOR DRIVEN, MANUAL	6 (1-PHASE)	6 (1-PHASE)
	719,720,721,722,723,724-89MB/BB 721R,724R-89MB	MAINTENANCE EARTHING SWITCH	MOTOR DRIVEN, MANUAL	14 (3-PHASE)	14 (3-PHASE)
	721R,724R-89LRE 724R-89LBRSE	MAINTENANCE EARTHING SWITCH (SINGLE PHASE OPERATION)	MOTOR DRIVEN, MANUAL	7 (1-PHASE)	7 (1-PHASE)
	719, 721, 722, 724-89LE	HIGH-SPEED EARTHING SWITCH	MOTOR DRIVE SPRING CHARGED, MANUAL	4 (3-PHASE)	4 (3-PHASE)
	719,721,722,724-CTA 720, 723-CTA-I & CTA-2	CURRENT TRANSFORMER (FOR MAINBUS & TIE)	RING TYPE	24 (1-PHASE)	24 (1-PHASE)
	719,721,722,724-CTB	CURRENT TRANSFORMER (FOR MAINBUS)	RING TYPE	12 (1-PHASE)	12 (1-PHASE)
	21	GAS TO AIR BUSHING		6 (1-PHASE)	6 (1-PHASE)
*	CSD	CONTROL SWITCHING DEVICE		2 (3-PHASE)	2 (3-PHASE)

SYSTEM PARTICULARS :-

A) NOMINAL VOLTAGE	765kV
B) HIGHEST SYSTEM VOLTAGE	800kV
C) ONE MINUTE POWER FREQUENCY DRY & WET WITHSTAND VOLTAGE(RMS)	830kV
D) FULL IMPULSE WITHSTAND VOLTAGE(1.2/50MICRO SEC)	2100kVP
E) SWITCHING IMPULSE WITHSTAND VOLTAGE(250/2500 MICRO SEC) DRY & WET	1630kVP
F) SHORT CIRCUIT LEVEL (kA)	50kA FOR 1SEC
G) MINIMUM SPECIFIED CREEPAGE DISTANCE FOR INSULATOR STRING(ON GROD INSULATORS) OUTDOOR BUSHINGS SHALL BE 31mm/kV.	
H) MINIMUM SPECIFIED CREEPAGE DISTANCE FOR OTHER SWITCHYARD EQUIPMENTS SHALL BE 25mm/kV.	

CT DATA

DEVICE NO.	CT NO. / SPEC.	CT-1 & CT-2								CT3		
		CT1			CT2							
FOR TIE BAY	Ratio(kA)	3000/1	2000/1	500/1	3000/1	2000/1	500/1	3000/1	2000/1	500/1		
	Burden(VA)	-	-	-	-	-	-	-	-	-		
	VK(V)	>3000	>2000	>500	>3000	>2000	>500	20VA	20VA	20VA		
	Ie@Vk(mA)	<26	<30	<120	<20	<30	<120					
	Rct@20deg	<1.5	<1.0	<2.5	<1.5	<1.0	<2.5					
	REF	-			-			<5				
	Accuracy class	PX			PX			0.2S				
	APPLICATION	PROTECTION			PROTECTION			METERING				

DEVICE NO.	CT NO. / SPEC.	CTA						CTB					
		CT1			CT2			CT3			CT1		CT2
FOR LINE BAY & FUTURE LINE BAY	Ratio(kA)	3000/1	2000/1	500/1	3000/1	2000/1	500/1	3000/1	2000/1	500/1	3000/1	2000/1	500/1	3000/1	2000/1	500/1
	Burden(VA)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	VK(V)	>3000	>2000	>500	>3000	>2000	>500	20VA	20VA	20VA	>3000	>2000	>500	>3000	>2000	>500
	Ie@Vk(mA)	<20	<30	<120	<20	<30	<120				<20	<30	<120	<20	<30	<120
	Rct@20deg	<1.5	<1.0	<2.5	<1.5	<1.0	<2.5				<1.5	<1.0	<2.5	<1.5	<1.0	<2.5
	REF	-			-			<5			-			-		
	Accuracy class	PX			PX			0.2S			PX			PX		
	APPLICATION	PROTECTION			PROTECTION			METERING			PROTECTION			PROTECTION		

LEGENDS FOR 765kV AIS EQUIPMENT

SYMBOL	DESIGNATION OF EQUIPMENTS	DESCRIPTION	BPS QUANTITY	ACTUAL QUANTITY
	719,722-LA	624kV SURGE ARRESTER (1-PHASE)	06 NOS.	06 NOS.
	719,722-CVT	765 kV,5600 PF CAPACITIVE VOLTAGE TRANSFORMER (1-PHASE)	06 NOS.	06 NOS.
	719,722-WT	765kV 315OA, 1.0mH, 50kA LINE TRAP	04 NOS.	04 NOS.

REFERENCE DRAWING

1. HYOSUNG SINGLE LINE DIAGRAM : HI-101856614-401-101
2. ELECTRICAL LAYOUT PLAN : KEC-SA4DS-MAIN-D01-0054DRG-001

NOTES

1. THE DESCRIBED EQUIPMENTS ARE 765/800kV RATINGS.
2. INSULATION LEVEL & CONTINUOUS CURRENT RATING OF INSULATING LINK WILL BE 100kV, 200A.
3. WAVE TRAP SHALL BE ERECTED IN TWO PHASES ONLY. HOWEVER FINAL TO BE CONFIRMED BY M/s PGCIL.
4. EARTHABLE PHASE ISOLATOR VOLTAGE RATING SHALL BE RATED TO WITH STAND PHASE-PHASE VOLTAGE.
5. DOT LINE (.....) MEANS EXISTING/FUTURE SCOPE.
6. THE CONTINUOUS LINE (———) MEANS PRESENT SCOPE.

CLIENT: POWER GRID CORPORATION OF INDIA LTD.

LEAD PARTNER OF JV: KEC INTERNATIONAL LIMITED

OTHER PARTNER OF JV: HYOSUNG CORPORATION

NOW-I : SUPPLY: CC/TPW-GIS/ICON/A09223/04602/NOA-1224-101811/01 DATE: 09/02/2024

NOW-II : SERVICE: CC/TPW-GIS/ICON/A09223/04602/NOA-2224-101811/02 DATE: 09/02/2024

PROJECT CODE : SA420

PROJECT:
765kV GIS SUBSTATION PACKAGE -SS 07T FOR EXTENSION OF 765kV NARENDRA (GIS) S/S UNDER "TRANSMISSION SCHEME FOR INTEGRATION OF RENEWABLE ENERGY ZONE (PHASE-II) IN KOPPAL-II (PAHSE-A) AND GADAG-II (PHASE-A) IN KARNATAKA" THROUGH TARIFF BASED COMPETITIVE BIDDING (TBCB) ROUTE.

SUBSTATION: 765kV NARENDRA GIS EXTN. SS

TITLE: 765kV GIS SUBSTATION SINGLE LINE DIAGRAM

DESIGN: ELECTRICAL SUBSTATION DATE: 17.07.24

DRAWING: KEC-SA420-NARESE-301-DRG-001 SCALE: N.T.S.

SHEET NO: 01 of 01 REV: R1

REV	DATE	DESCRIPTION	DRN	CHD	APP
R1	17.07.24	SECOND SUBMISSION	SP	NM	MM
R0	11.06.24	FIRST SUBMISSION	SP	NM	MM

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