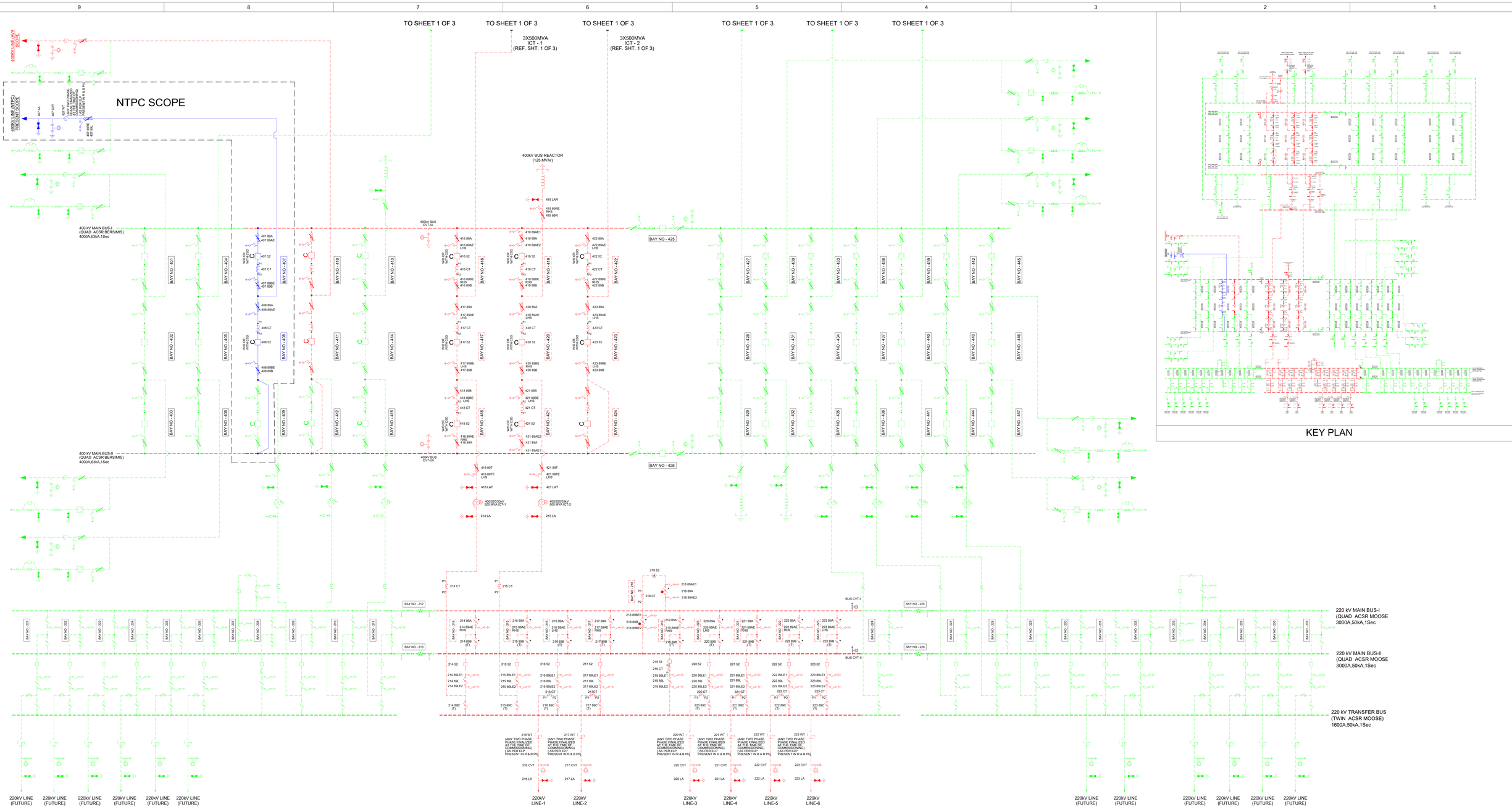


KEY PLAN

420 kV CT (3000A) CORE DETAILS:

CORE NO	CURRENT RATIO	OUTPUT BURDEN(VA)	ACCURACY CLASS	MIN. KNEE POINT VOLT. (V)	MAX. CT S.W.R (ohm)	MAX. EXCITING CURRENT AT KPV (mA)
01	3000 / 2000 / 500 / 1	-	PX	3000 / 2000 / 500	15/ 10/ 2.5	20 on 3000/1 TAP 30 on 2000/1 TAP 120 on 500/1 TAP
02	3000 / 2000 / 500 / 1	-	PX	3000 / 2000 / 500	15/ 10/ 2.5	20 on 3000/1 TAP 30 on 2000/1 TAP 120 on 500/1 TAP
03	3000 / 2000 / 500 / 1	20 20 20	0.2S	-	-	- - -
04	3000 / 2000 / 500 / 1	20 20 20	0.2S	-	-	- - -
05	3000 / 2000 / 500 / 1	-	PX	3000 / 2000 / 500	15/ 10/ 2.5	20 on 3000/1 TAP 30 on 2000/1 TAP 120 on 500/1 TAP
06	3000 / 2000 / 500 / 1	-	PX	3000 / 2000 / 500	15/ 10/ 2.5	20 on 3000/1 TAP 30 on 2000/1 TAP 120 on 500/1 TAP

NOTE : 1. PROTECTION CORES SHALL BE OF ACCURACY CLASS PX AS PER IEC 61869.
2. METERING CORE SHALL BE OF ACCURACY CLASS 0.2S AS PER IEC: 61869.

420kV, 4400pF CVT CORE DETAILS:

PARTICULARS	SECONDARY-1	SECONDARY-2	SECONDARY-3
RATED SECONDARY VOLTAGE (V)	110/ $\sqrt{3}$	110/ $\sqrt{3}$	110/ $\sqrt{3}$
APPLICATION	PROTECTION	PROTECTION	METERING
ACCURACY	0.5/3P	0.5/3P	0.2
OUTPUT BURDEN(MIN)	50 VA	50 VA	50 VA
VOLTAGE RATIO	400 / 0.11 / $\sqrt{3}$ / $\sqrt{3}$	400 / 0.11 / $\sqrt{3}$ / $\sqrt{3}$	400 / 0.11 / $\sqrt{3}$ / $\sqrt{3}$

SYSTEM PARAMETERS:

SL No	DESCRIPTION	400kV
1.0	RATED VOLTAGE	400 KV
2.0	HIGHEST SYSTEM VOLTAGE	420 KV rms
3.0	RATED FREQUENCY	50 Hz
4.0	MAX. FAULT LEVEL	63 KA (1Sec.)
5.0	RATED 1 min POWER FREQ. WITHSTAND VOLTAGE	630 KV rms
6.0	RATED SWITCHING IMPULSE VOLTAGE (DRY & WET)	1050 KVp
7.0	FULL WAVE IMPULSE WITHSTAND VOLTAGE	1550 KVp
8.0	MINIMUM CREEPAGE DISTANCE - EQUIPMENT	10500 mm
9.0	MINIMUM CREEPAGE DISTANCE - INSULATOR	13020 mm
9.0	SYSTEM EARTHING	EFFECTIVELY EARTH

BILL OF QTY. FOR 400kV MAIN EQUIPMENTS (FAULT LEVEL 63kA for 1 sec) :

SL.NO.	DESCRIPTION	UNIT	ACTUAL QUANTITY	SYMBOL	BAY NO.	REMARKS
1	420kV, 3150A, 63kA CIRCUIT BREAKER(3-PH) WITHOUT CLOSING RESISTOR (With Support Structure)	EA	02		407,408	
2	420kV, 3000A, 63kA,1-PH CURRENT TRANSFORMER WITH 120 % EXTENDED CURRENT RATING	EA	06		407,408	
3	420kV, 4400pF CAPACITIVE VOLTAGE TRANSFORMER(1-PH)	EA	03		407	
4	420kV, 3150A, 63kA ISOLATOR (3-PH) (DOUBLE BREAK) WITH 1 E/S	EA	05		407,408	
5	336kV SURGE ARRESTER (1-PH)	EA	03		407	
2	400kV,3150A,63kA LINE TRAP 1SEC. (1-PH)	EA	02		407	

BILL OF QTY. FOR 220kV MAIN EQUIPMENTS (FAULT LEVEL : 50kA for 1 sec) :

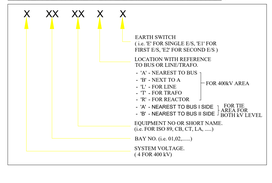
BUS & BAY CURRENT RATING :

SL NO.	DESCRIPTION OF BAY	400kV
1.	BUS BAR	4000A
2.	LINE BAY	3150A
3.	ICT BAY	3150A
4.	BUS REACTOR BAY	3150A
5.	BUS COUPLER BAY	--
6.	TRANSFER BUS COUPLER BAY	--
7.	BUS SECTIONALIZER BAY	--

CONNECTION DETAILS FOR 400kV SWITCHYARD :

400kV SIDE	
DESCRIPTION	CONDUCTOR/ ALUMINIUM TUBE
400kV MAIN BUS : I & II	QUAD ACSR BERSIMIS
JACK BUS	QUAD ACSR MOOSE
400kV LINE ENTRY	TO BE PROVIDED M/S INDIGRID
400kV JUMPERS/ DROPPER	QUAD/TWIN MOOSE ACSR.
EQUIPMENT INTERCONNECTION	4.5" IPS AL. TUBE

NOMENCLATURE FOR EQUIPMENT MARK NO. :



LEGENDS:

PRESENT SCOPE
FUTURE SCOPE
EXISTING SCOPE

REV	DESCRIPTION	PREP.	CHKD.	APPD.	DATE
		SIGN.			
0	FIRST SUBMISSION	P.K.	S.K.	P.S.	26.08.26

OWNER	ISHANAGAR POWER TRANSMISSION LTD
NOA NO.	TENDER PURPOSE
PROJECT	Implementation of 1 no. 400kV line bay at Ishanagar S/s for RE Interconnection of M/s NTPC Renewable Energy Limited 630 MW RPP. 400kV line bays – 1 No.
SUBSTATION	765/400/220kV AIS SUB-STATION AT ISHANAGAR (NEW)
DRG. TITLE	400kV SINGLE LINE DIAGRAM
DRG. NO. :	XXXX-XXXX-XXX-XXXXX-X-XXX-XX-XXX
SCALE :	N.T.S JOB NO: XXXXX SHEET 1 OF 1