

Annexure-~~XXXII~~

Mandatory Spares for 400/220KV Switchyard Equipment and Hardware

Sl. No.	DESCRIPTION	Qty.	
(1)	(2)	(3)	
Mandatory Spares for 400/220KV Switchyard Equipment			
I	CIRCUIT BREAKERS	400KV	220KV
1	Relays, power contactors, switch-fuses for electrical control circuit (consisting of one no. each of all types and ratings)	1 set	1 set
2	Set of gaskets, rings & seals	1 set	1 set
3	Molecular filter for Circuit breaker	1 set	1 set
4	Tripping and closing coil (each type)	6 nos.	6 nos.
5	Density monitoring system for ckt. Bkr	2 sets.	1 set
6	Set of spares for pneumatic/ Spring/ hydraulic operated mechanism (as applicable) as per detail below Spare for pneumatic operated mechanism a. Motor for compressor- 1no. b. Pressure switch and valve-1no. of each type Spare for spring operated mechanism a. Motor with gears-1no. b. Limit switch- 1no. of each type Spare for hydraulic operated mechanism a. Motor with gears-1no. b. Limit switch- 1no. of each type	2 sets	2 sets
7	Fixed and moving arcing contact	2 sets	2 sets
8	Terminal connector (of each type)	3 nos.	2 nos.
9	One Complete Pole including operating mechanism but excluding support structure and terminal connectors.	1 no.	1 no.
10	SF6 Gas Filling valve	1No.	1No.
II	ISOLATORS	400KV	220KV

1.	One complete pole of HCB isolator with 2 E/S along with operating mechanisms, etc. without support structure	1 no.	1 no.
2.	Copper contact fingers for female contacts	6 nos.	6 nos.
3.	Relay, power contactors, switch fuses for electrical control circuit (one no. of each type and rating)	1 set	1 set
4.	Limit switch & aux. switch	6 nos.	6 nos.
5.	Terminal connectors	1 no. of each type	1 no of each type
6.	Rotary Bearing for Isolator	3Nos.	3Nos.
III	CURRENT TRANSFORMER complete in all respects including terminal connectors etc.	2 no	1no
IV	CAPACITOR VOLTAGE TRANSFORMER complete in all respects including terminal connectors etc.	1no(4400pF) 1no (8800pF)	
V	SURGE ARRESTER complete in all respects with surge counter, etc.	2 nos.	2 nos.
	Notes: 1. Set means for complete replacement of one circuit breaker and isolator. (three phase)		
	2. For CT, CVT and Surge Arrestor, number(no.)		
	Means for complete replacement of one pole/phase of the equipment		
MANDATORY SPARES FOR 400/220 KV SWITCHYARD HARDWARE			
1	10% of each type of clamps, connectors and spacers	1Lot	1Lot
2.	03 nos. of each type of insulator string and hardware	1Lot	1Lot

MANDATORY MAINTENANCE EQUIPMENT

Sl. No.	DESCRIPTION	Qty.
(1)	(2)	(3)
I.	FOR CIRCUIT BREAKER	
	SF6 Gas filling and evacuating plant (portable)	1 no.
	Sf6 Gas recycling and purifying plant (300ltrs)	1 no.
	SF6 gas leak detector	2 no.
	Operation analyzer with DCRM Kit	1 no.
II.	FOR SURGE ARRESTER	
	Leakage current analyzer (The LCM shall be suitable for measuring resistive leakage current of all Las in the switchyard and the accuracy shall be +/-1% of the reading. The technical requirement of LCM shall be as per CBIP manual on HV substation equipment maintenance) (for Gapless Surge Arrester)	1 no.

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