

Spare Parts for Turbine, Cooling Water System, MIV and PPV for Tato-1 HEP

Turbine:

S. No.	Description	Quantity
A)	TURBINE	
1.	Guide vane bearing bushes (top and bottom)	1 set
2.	Guide vane stem packing	1 set
3.	Guide vane bolts	1 set
4.	Shear pins	2 sets
5.	Guide vanes	1 set
6.	Shaft seal packings	1 set
7.	Runner	1 set
8.	Piston rings for guide vane servomotor	2 sets
9.	Set of gaskets, seal, 'O' rings of all types and size	2 sets
10.	Bushes for regulating mechanism	2 sets
11.	Shaft protective sleeve provided at shaft gland seal	1 No.
12.	Bearing shell for turbine guide bearing	1 No.
13.	RTD	2 sets
14.	Level switches	1 set

Cooling Water System:

The following spare parts shall be included in the supply:

S. No.	Description	Type / size	Quantity	
I	COOLING WATER SYSTEM		TG Unit	Fire Water Storage Tank
A)	Cyclone Separator			
1	Purging Valve		3 nos.	-
B)	Automatic Motorized Self Cleaning Strainers			
1	Strainer Element		3 nos.	1 no.
2	Geared Motor		3 nos.	1 no.

S. No.	Description	Type / size	Quantity	
I	COOLING WATER SYSTEM		TG Unit	Fire Water Storage Tank
3	Gaskets		3 nos.	1 no.
4	Drainage electric Valve with Motor		3 nos.	1 no.
C)	Pumps			
1	Impeller		3 nos.	1 no.
2	Bearings	each type/size	3 nos.	1 no.
3	Mechanical Seal	each type/size	3 nos.	1 no.
D)	Valves & Instruments:			
1	Valves	each type/size	1 set	1 set
2	Pressure Gauge		1 no.	1 no.
3	Differential Pressure Switch (4-20 mA)		1 no.	1 no.
4	Pressure Switch		1 no.	1 no.
5	Flow Transmitter		1 no.	1 no.
6	Temperature Indicator		1 no.	1 no.
7	Components of Starters for Pumps & Control		1 set	1 set

Main Inlet Valve:

S. No.	Description	Type/size	Quantity
I	MAIN INLET BUTTERFLY VALVE		
1	Disc Seals of synthetic Nitrile rubber each for Service Seal and Maintenance Seal.		1 set
2	Clamping Ring/Retaining Ring of each type for the Valve Seal (with Ring Bolts)		1 set
3	Trunnion Bearings		1 set
4	All Packing, Seals etc. for Trunnion Bearings		1 set
5	All Packing, Seals etc. for Servomotors		1 set

S. No.	Description	Type/size	Quantity
6	All Packing, Seals etc. for Bypass Valve		1 set
7	Piston Rings and Bushings for Hydraulic Servomotors		1 set
8	'O' Ring (Nitrile rubber) of Shaft Pin		1 no.
9	Seals ('O' Ring) for Gate Valves	each type/size	2 sets
10	Spares for Air Release Valve		1 set
11	Spares for Anti Vacuum Valve		1 set
12	Spares for Needle Valve		1 set
13	Limit Switch	each type/size	2 nos.
14	Proximity Switch	each type/size	2 nos.
15	Auxiliary Relays/ Contacts (ABB Make)	each type/size	2 nos.
16	Timers	each type/size	2 nos.
17	Power Contactors with Overload Relays		1 Set

Penstock Protection Valve:

S. No.	Description	Type/size	Quantity
I	PENSTOCK PROTECTION BUTTERFLY VALVE		
1	Disc Seals of synthetic Nitrile rubber each for Service Seal and Maintenance Seal.		1 set
2	Clamping Ring/Retaining Ring of each type for the Valve Seal (with Ring Bolts)		1 set
3	Trunnion Bearings		1 set
4	All Packing, Seals etc. for Trunnion Bearings		1 set
5	All Packing, Seals etc. for Servomotors		1 set
6	All Packing, Seals etc. for Bypass Valve		1 set
7	Piston Rings and Bushings for Hydraulic Servomotors		1 set
8	'O' Ring (Nitrile rubber) of Shaft Pin		1 no.
9	Seals ('O' Ring) for Gate Valves	each type/size	2 sets
10	Spares for Air Release Valve		1 set
11	Spares for Anti Vacuum Valve		1 set
12	Spares for Needle Valve		1 set

S. No.	Description	Type/size	Quantity
13	Limit Switch	each type/size	2 nos.
14	Proximity Switch	each type/size	2 nos.
15	Auxiliary Relays/ Contacts (ABB Make)	each type/size	2 nos.
16	Timers	each type/size	2 nos.
17	Power Contactors with Overload Relays		1 Set