

ANNEXURE-D IV
LIST OF AMC / OEM / LTSA / SUBCONTRACT SERVICES

Sr. No.	Type OF Eqpt.	Description of Work / Activities	Scope	
			Owner	O&M Operator
1	Transformer	Desolve Gas Analysis (DGA) - Half Yearly	x	√
2		Transformer Oil Analysis (including Furan Analysis)	x	√
3		RLA testing (offline) of power transformer	√	x
4		Tan delta testing of distribution transformer	x	√
5		Online PD measurement of power transformers	√	x
6		Services for Testing, Checking, overhauling & Healthines of Transformers	x	√
7		Transformer Oil Filtration	x	√
8		Transformer Core Lifting and Internal inspection if required to diagnose transformer fault condition.	x	√
9		OLTC Repair and Overhauling (On Site) of Power Transformer.	x	√
10		Rewinding of Transformers.	√	
11	Motors	Rewinding of HT (Owner) & LT Motors (O&M operator)	√	√
12		Overhauling and repairing of LT Motors.	x	√
13		Critical LT motors housing repair or any repair other than bearing replacement to be carry out in HMEL Workshop.	√	x
14		Tan delta testing of HT motors		√
15		LEAP test of HT motors.	√	x
16		Condition Monitoring of Equipments and Motor Current Signature Analysis (MCSA) of HT motors.	x	√
17		Services for Testing, Checking & Healthines of Motors	x	√
18	Switchyard	CT/PT/LA Tan Delta of 220 kV Switch Yard.	x	√
19		220kV yard equipment preventive maintenance shall be carried out by O&M contractor once-in-five-years - as per PM philosophy	x	√
20		Thermography of 220KV switchyard equipments	x	√
21		Services for Testing, Checking & Healthines of Switchyard Equipments	x	√
22		Overhauling of 220KV switchyard breakers	x	√
23		During Major maintenance of Switchyard, P&M support (Man-lifter & Trailer) to be provided by HMEL to carry out jobs safely	√	x
24		Testing of switchyard equipment's if needs to be carry out from PSPCL, charges to be incurred by HMEL. However, co-ordination is in scope of O & M.	√	x
25		Coordination with M/s PSPCL regarding 220kV transmission line maintenance and troubleshooting shall be in O&M contractor scope	x	√
26		Patrolling with PSPCL in case of line fault upto upstream PSPCL substation		√
27		LEAP test of generators	√	
28	Generator	Major overhauling of Generators involving rotor thread out including expert. Coordination , Supervision & site support with existing resources to be provided by O&M	√	x
29		Generator maintenance not including rotor thread out including bearing inspection, exciter maintenance. OEM expert if required to be provided by owner.	x	√
30	Cables	Power Cable Fault locator (Upto 33KV) and Cable Jointing (Jointing Kit to be provided by Owner)	x	√
31		OFC Cable Fault locator and Cable Jointing/Splicing (Splicing Kit to be provided by Owner).	x	√
32		All control cable, earthing cable, communication cable and LT power cable (up to 3.5/4Cx70sqmm size) laying and its glanding & termination is in the scope of O&M contractor. (For MOC & reliability improvement activities)	x	√
33		Offline & online diagnostic testing of power cables including - tan delta, PD or other specilized test	√	x
34		Cable route survey (including 33KV cable upto refinery power transformer), repair, thermography of joints, HT cable route earth pit maintenance as per defined battery limit of cables.	x	√
35	Switchboard	Services for Testing, Checking & Healthines of Switchgears (excluding 33kV GIS), Relays and Panels.	x	√
36		Relay programming, Testing including testing kits ,laptops, communication cables, softwares, any required OEM service support	x	√
37		Breaker Servicing and Testing	x	√
38		Thermography of equipments	x	√
39		Online PD measurement of HV switchboards (including GIS)	√	x
40		Repair of Cards, Relays and Equipments from OEM works / service centre.	√	x
41	MOV	Motor Operated Valves (MOV) Repair and Overhauling in O&M contractor scope. Material in owner scope.	x	√
42	ECS	ECS operation and maintenance including CPP & upto downstream RTU panels.	x	√
43	HVAC	Services for Air Conditioning (Spares /consumables shall be in O&M contractor scope including belts, refrigerants)	x	√
44		VAM and HVAC (VAM & HVAC AMC shall be in O&M contactor scope with dedicated team at the site)	x	√
45	EDG	EDG_CPP - Services for Engine, alternator & control system	x	√
46	Battery Charger	AMC / Services for Battery Chargers	x	√
47	Other Eqpts.	AMC / Services for VFD, ECS, DCP, DCS, PLCC, GIS, AVR, Heater Panels, UPS and Lift are in owner scope, however coordination shall be done by O&M Operator.	√	x

Sr. No.	Type OF Eqpt.	Description of Work / Activities	Scope	
			Owner	O&M Operator
48		HMEL certified vendors to be selected while giving electrical testing activities subcontracting.		√
49		AMC for new equipments/systems installed by reliability team	√	x
50		Provide P&M support/Man-lifter for carrying out any repair work on cable trays (Work at height)	√	x
51		Temporary power & Lighting arrangement (24 V & 220 V) during routine maintenance & shutdown period.	x	√
52		SF6 gas testing for 220 KV & 33 KV	x	√
53		AMC / Services for DCS (MaxDNA / Yokogawa), GT (Mark VI), BMS (Honeywell Safety Manager / Yokogawa) & Machine Monitoring System (Bentley System), AMS, However coordination shall be done by O&M Operator	√	x
54		AMC / ARC Services for field mounted control system (PLC : GE Fanuc, Mitsubishi, Allen Bradley, Siemens, Ingersoll Rand, Woodward), CCTV, CO2 System of Gas Turbine, Hydrocarbon Detection System and Analysers (O&M Contractor may deploy manpower from existing contractor working with HMEL for Analyser Maintenance), Master Clock, HMI	x	√
55		System Desktop and Antivirus softwares.	√	x
56		All scaffold for CPP O&M (also including for minor painting jobs, insulation & jobs which are required for plant reliable operation) will be in O&M scope Scaffold for civil jobs will be in HMEL scope	√	√
57		Online Sealing and Online testing of PSVs (Clamps for online sealing in owner scope)	x	√
58		Refractories Repair without Material (Material in owner scope)	x	√

Sr. No.	Type OF Eqpt.	Description of Work / Activities	Scope	
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59		Insulation for STG-1, 2 & 3 specific to turbine will be in HMEL scope, rest of the insulation & refractory application will be in O&M	√	√
60		Cummins DG (Black Start DG) _GTG	X	√
61		IBR Related Jobs	X	√
62		Hydraulic Torquing	√	X
63		Flange Facing	√	X
64		Arrangement of all testing equipments and execution of RT, HT, DP after Hot Work.	√	X
65		OEM support during trouble shooting and maintenance of critical equipments like DCS . Refer point 23.	√	X
66		OEM support during trouble shooting and maintenance of equipments by O&M	X	√
67		Manpower Support to OEM	X	√
68		Overhauling, Testing and Tunning of Control Valves, Mechanical valves, PRV, PCV and PSV at HMEL Workshop.Only Facilities shall be extended.	X	√
69		Material Handling Equipments (Hydra, Forklift etc) above 12 M Ton of cranes / Hydra.	√	X
70		Painting of Structure and Equipments.	√	X
71		AMC for House Keeping including Mechanised tools (Vacuum cleaners, Scrubber Driers, Water Jets and Mechanised moppers)	X	√
72		AMC for Pest Control	X	√
73		Services for Third Party Compliance for Lifting Tools/Tackles, Pressure vessels, EOT Cranes and Lift.	X	√
74		Services for Third Party Compliance for Calibration of Measuring and Testing equipments.	X	√
75		Services for Landscapping and horticulture of all areas.	√	X
76		Minor and Major Civil Repair	√	X
77		OEM support of Material Handling Equipments of Coal Handling System , Flyash handling , Botton ash handling , Limestone handling & Bed material	X	√
78		Ash handling system weighbridge operation & maintenance	X	√
79		OEM required for Gas turbine, STG, and GBC i.e. BGGTS/BHEL/John crane will be in HMEL scope. For rest of the equipment it will be in scope of O&M contractor. But field technician for Inst. removal/ calibration/ Installation in O&M scope	√	√
81		All gate pass and vehicle support inside HMEL premises for OEM called by HMEL to support O&M contractor will be in scope of O&M contractor	X	√
82		Hydraulic Oil Filteration	X	√
83		Condition monitering of equipment, analysis and troble shooting	X	√
84		Online sealing and online testing of PSV	X	√
85		Refractory repair (without material)	X	√
87		Rail Track maintenance of O&M track	X	√
88		Minor modification execution for plant improvement shall be in O&M scope	X	√
89		Annual shutdown / turnaround jobs shall be in O&M scope	X	√

