

STAGE - I

Subject: “Stage-I Housekeeping of Main Plant & off site area and deashing of Hoppers, Choking Removal from Feeder, Handling of coal Mill Reject,” at NTPC-Tanda 4x110 MW.

Part A-Deashing of Bottom ash hoppers, ESP hopper, choking removal from feeder and operation of mill reject pyrite gate

Scope of Work

SECTION – 1 Operation of mill reject pyrite gate & Assisting operation staff for different operation activities.

For operation support the sufficient numbers of unskilled manpower is to be deployed daily in all the three shifts i.e. from 06:00 hrs to 14:00 hrs, 14:00 hrs to 22:00 hrs and 22:00 hrs to 6:00 hrs. including Sunday and Holiday in Unit # 1,2,3&4. whether running or under shut down to carry out the following jobs as per the instructions of EIC.

- 1.1 Assisting operation staff to carry out heavy jobs like manual operation of valves, dampers etc. under their supervision, during normal running as well as during shut down/ overhauling of the unit in round clock basis.
- 1.2 Assisting operation staff during, mill purging, mill pyrite hopper poking as well as Mill rejects removal from its pyrite hopper and stacking it at a place (s) specified by UCE/EIC in round the clock basis.
- 1.3 Assistance in heavy occasional jobs like oil coolers draining manual operation of various valves / dampers etc. in round the clock operation, H₂, CO₂ cylinder shifting after general shift hours if required.
- 1.4 Distributions of log sheets, Dak, inter departmental paper, notice board display etc. as and when required, during round the clock operation.
- 1.5 Cleaning of UCB desk and furniture in every shift.
- 1.6 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 02 (two) USW in each Unit.

The activities detailed above shall constitute one job for Section – 1

SECTION – 2 Removal of choking from bunker to feeder pipe, bringing down coal from bunker to feeder of Unit # 1,2,3 & 4

Sufficient numbers of unskilled man power is to be deployed in all three shifts i.e. from 6:00 hrs. to 14:00 hrs., 14:00 hrs. to 22:00 hrs. and 22:00 hrs to 6:00 hrs. including Sundays and holidays in Unit – 1, 2,3 & 4.

- 2.1 To establish coal flow in RC feeders by poking, removal of choking from Bunker outlet to feeder and to hammer RC feeder to establish uninterrupted coal flow through RC feeders.
- 2.2 To clean feeder area of accumulated coal thus obtained from feeder by choking & poking.
- 2.3 To dispose of the accumulated coal from feeder floor to Boiler zero meter area through discharge chute as specified by EIC.
- 2.4 Cleaning/washing of area will be done by the contractor in running units after general shift hours.
- 2.5 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 01 (one) USW in each Unit.

The activities detailed above shall constitute one job for Section – 2.

SECTION – 3 Deashing of Bottom ash hoppers and Ash evacuations from ESP hoppers of Unit # 1, 2, 3 & 4.

Sufficient numbers of unskilled man power is to be deployed in all three shifts i.e. from 6:00 hrs. to 14:00 hrs, 14:00 hrs. to 22:00 hrs. and 22:00 hrs to 6:00 hrs. Including Sundays and holidays in Unit – 1, 2, 3 & 4.

- 3.1 Bottom ash hopper poking, bottom ash hopper clinkers & ash channel cleaning, stacking at a place (s) specified by UCE / EIC on round clock basis.
- 3.2 Bottom ash hopper gates operations as per the direction of UCE in round the clock operation.
- 3.3 Proper and complete evacuation of ash from ESP hoppers in both wet and dry mode of system and cleaning of different floors, structures platforms & trenches, regular hammering of ESP flushing apparatus, hoppers drain pipes and bottom portion of ESP hopper.
- 3.4 Fly ash removal and choking removal from outgoing pipelines and its associated hoppers 28 nos. in dry and wet condition, keeping the flushing apparatus clean of any debris or ash accumulation.
- 3.5 Removal of ash, dust, debris etc from zero meter floor ESP and keep it always clean by water washing / brooming.
- 3.6 Regular operation of plate valves, hammering & removal of choking should be carried out in each unit of the following hoppers in each shift –
 - i) Economizer hopper - 04 nos. in each unit
 - ii) Air pre-heater hopper - 04 nos. in each unit.
 - iii) ESP hoppers - 28 nos. in each unit
 - iv) Duct hoppers - 02 nos. in each unit
- 3.7 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 02 (two) USW in each Unit.

The activities detailed above shall constitute one job for Section – 3

SECTION – 4 Three munsies are to be deployed in shift, to look after the job related as per scope of work and as per the instruction of EIC from time to time. However munshi qualification and his suitability to carry out the work as per SOW shall be examined by EIC. Munsi should report to EIC/SCE/ASCE/UCE for taking instructions and should be available during his duty for taking instructions as well as he has to give feed back of the executed job also.

As per our assessment minimum requirement of above activities in one shift operation is one (01) SSW.

The activities detailed above in one shift shall constitute one job for Section – 4

PART- B

Lifting & disposal of CMR / Fresh coal / debris / clinkers from Unit I, II, III & IV.

Section-1 Lifting & disposal of CMR.

Scope of work

Lifting of mill rejects from the mills basement of all Units i.e. from Unit # I, II, III&IV loading into tractor trolley with the help of sufficient number of USW and its transportation to the mill rejects yard, as specified by the Engr I/C. Which will be inside or outside the plant premises approximately 3-4 Km away from the mill basement and its dumping in the yard in proper way. In the similar manner Ash/clinkers etc. are also to be lifted and transported from the bottom ash hopper areas fly ash trenches to the place(s) as specified by the Engr. I/C, which will be inside or out side the plant premise approximately 3-4 km away from the bottom ash area. The contractor has to handle whole mill rejects clinkers / bottom ash etc. generated on the day to day basis, which may vary from zero cubic meters to 150 cubic meter per day, and is to be removed from the Units on daily basis. The payment will be made purely on per cubic meter handled basis, which includes lifting, transportation and dumping at place (s) as specified by Engr. I/C, inside or out side plant premises, for the total mill reject/bottom ash/ clinkers etc. handled by the contractor.

1.1 The contractor shall deploy the requisite number of tractors trolley with sufficient labour per day for handling mill rejects and he has to clear the rejects from mill areas on daily basis.

1.2 The mill rejects/clinker etc. generated per day may vary from 0 m³ to 27 m³. The above data is indicative only. However depending upon the mill & coal condition the quantity of mill reject may exceed beyond 27 m³ which is to be removed from the Units on daily basis.

1.3 In case of bulk generation of mill rejects/bottom ash / clinker etc. the contractor has deploy additional/ tractors trolley to remove the rejects / clinker speedily on the same day. Contractor

has to work on round the clock basis and keep the area clean in the situation as described in point no. 1.2

1.4 The work is to be executed on all the days in a week including Sunday, National Holidays, gazetted holidays etc. as directed by EIC.

1.5 Contractor shall transport coal mill rejects/bottom ash/ clinkers etc. to place (s) in side or outside of the premises as directed by Engr. I/C but in any case the distance will not be more than 5 km from the lifting place. However daily minimum quantity is not assured.

1.6 Quantity of coal mill reject may vary $\pm 50\%$.

Section-2 Lifting & Transportation of fresh coal (Raw coal) from mill zero meter area & disposal in coal yard from Units # I,II,III&IV .

Scope of work :

Lifting of Raw & fresh coal that has fallen from feeder floor to the mill zero meter areas of Unit # I to IV loading into tractor trolley with the help of sufficient nos. of USWs & its transportation to the coal yard only and approximately 3-4 km away from the mill zero meter. This quantity may vary from 0 m³ to 150 m³ on any day & the contractor should be able to lift & transport the above quantity on daily basis. The payment will be made on actual quantity lifted on cubic meter basis which includes lifting, transportation & dumping at places/ coal yard as specified by EIC.

2.1 The contractor shall deploy the requisite number of tractor trolley with sufficient labour per day for handling raw coal from zero meter.

2.2 The fresh coal handled/generated per day may vary from 0 m³ to 150 m³; however payment shall be made on actual quantity lifted on cubic meter basis in a particular day. However, minimum daily quantity is not assured.

2.3 In case of bulk generation of fresh coal from feeder floors to Mill zero meter areas, the contractor has to deploy additional tractor trolley to remove the same on the same day.

2.4 Contractor has to work on round the clock basis and keep the area clean in the situation as described in point no. 2.3.

2.5 The work is to be executed on all the days in a week including Sunday, national holidays, gazettes holiday etc. as directed by Eng. I/C.

2.6 Transportation of fresh coal accumulated after emptying of coal bunkers during overhauling of units to avoid any delay in overhauling activates.

2.7 Quantity may vary to (\pm) 100%.

Section-3. Lifting & Transportation of debris and garbage's from Boiler, TG > areas of units I to IV and Off-site areas (CW, BCW pump house, Ash slurry pump house, FO pump House, Make up pump house, workshop and DM Plant area) .

Scope of Work

Lifting of debris and garbage generated daily from Boiler, TG > sides of all Units and from off-site areas (CW, BCW pump house, Ash slurry pump house, FO pump House, Make up pump house, workshop and DM Plant area). Loading into tractor trolley with the help of sufficient numbers of USWs and its transportation to the dumping yard as specified by Engr. I/C which will be inside or outside the plant premises approximately 3-4 km away.

The contractor has to handle the total quantity of garbage's generated on day to day basis. The payment will be made purely on actual no. of trips made which includes lifting, transportation & dumping at place (s) as specified by EIC.

3.1 The contractor shall deploy the requisite number of tractors trolley with sufficient labour per day for handling garbage's and he has to clear the same on daily basis.

3.2 The garbage and debris generated per day may vary, however payment shall be made on actual no. of trips made/done. However, minimum trips are not assured.

3.3 In case of bulk generation of debris and garbage as on particular day, the contracting agency has to deploy additional tractor trolley to remove the garbage's speedily on the same day.

3.4 Contractor has to work on round the clock basis and keep the area clean in the situation as described in point no. 3.3

3.5 The work is to be executed on all the days in a week including Sunday. National holidays, gazetted holidays etc as directed by Engr. I/C if required.

3.6 Quantity may vary to (\pm) 50%.

Part C: Main Plant Housekeeping

Scope of work:

SECTION – 1 (For all working days except Sundays & holidays i.e. for 611 days)

The scope of work is proper and complete cleaning, sweeping, washing, removal of any garbage / debris from generator transformer yard, TG- area, Boiler, Mill bay, bottom ash hoppers, FD & PA fans, ESP, ID fan area up to chimney road fencing, DG set room, new concrete area of switchyard, compressor house, switchyard compressor room, H₂ storage shed, lube oil cell building. The area to be covered under this will be between chimney road fencing but including the drain and brick on edge of the road (front road of ash slurry pump house) to switchyard road fencing from north to south and between columns 1 to 45 from East to West from East road and other area mentioned below.

- 1.1 Cleaning of complete area of generator transformer yard including transformers and CW valve pit.
- 1.2 Cleaning of all the floors, walls structure and staircases from A row to B row in TG area, TG hall, TG (- 3.5 m) and offices. It includes the proper cleaning of TG floor and applying liquid wax poll as per the instructions of EIC minimum five times in contract period.
- 1.3 Cleaning of all the floors, walls structure and staircases from B row to C row including the cleaning of switchgear (HT/ LT), Aux PRDS, cable gallery (- 3.5 m & 5.5 m), air washing unit, AHU, UCB, MCC room and all remaining rooms in the above area, excluding C&I/Electrical panels at all elevations up to the roof top of panels. This also includes the cleaning of all surface drains, pipe trenches, cable tray and cable trenches in above mentioned area.
- 1.4 Cleaning of all the floors, walls structure and staircases from C row to D row including the cleaning of mill bay, mill platform, feeder floor, chemical dosing rooms, AC plant & Deaerator floors.
- 1.5 Cleaning of whole Boiler house from D row to ESP road (complete) at all elevations of Boiler including cleaning of Tanks and duct- surfaces, external surface of the Boiler auxiliaries, floors, walls, roofs, all the surface drains, pipe trenches and cable trenches ..
- 1.6 External water washing of whole boiler (during Overhauling period) and mill area of Unit I, II, III&IV as and when directed by EIC.
- 1.7 Ceiling, walls and other structures of all buildings as mentioned above should be dusted regularly and cobweb etc. to be removed at regular intervals. Roof top between A to B row and C to D row should be maintained clean
- 1.8 Cleaning, sweeping, washing of floor, walls, structure, trenches, TAC house , buffer hopper area of dry ash system, MRCS compressor house, ESP control rooms, MCC rooms, pent house of ESP, Transformer area and open area surrounding of ESP from chimney fencing road to ESP road, complete area of ID fan, ducts, etc.
- 1.9 Housekeeping of DG set room, compressor house, switchyard compressor room, lube oil cell, Hydrogen shed, new concrete area of switchyard.
- 1.10 H₂, CO₂ cylinder shifting, lube oil drum shifting during emergency, assistance in heavy occasional job like oil coolers draining, manual operation of various valves/ dampers etc.

SECTION - 1: Area to be cleaned and their frequency as per SOW:

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	A -Row to switchyard fencing including CW v/v pits.	14617.72	Weekly	Dry or wet as per EIC
2	DG set	215.25	Daily	Dry
3	Switchyard compressor room	90.00	Daily	Dry
4	220 KV electrical stores &	660.50	Daily	Dry

	Compressor house			
5	A row to B row (TG '0' M)	7837.52	Daily	Dry or wet as per EIC
6	A row to B row (TG '9' M)	5754.92 x3* =17264.76	*Thrice in a day	Dry or wet as per EIC
7	TG (- 3) m	3132.00	Weekly	Dry or wet as per EIC
8	B row to C row, 6.6 KV switchgear, Offices	3025.00	Daily	Dry once + wet once
9	Cable gallery (- 3.5 M)	3025.00	Weekly	Dry or wet as per EIC
10	Cable gallery 5.5 M	3025.00	Weekly	Dry
11	UCB, MCB	1125.75 x 3* = 3377.25	*Thrice in a day	Wet / Dry
12	MCC & Offices of '9' M floor	1899.25	Daily	Dry or wet as per EIC
13	PRDS floor	1188.00	Daily	Dry or wet as per EIC
14	AHU 1&2 3&4 5&6	396.00	Alternate day	Dry as per EIC
15	Air washing Units	991.00	Weekly	Dry or wet as per EIC
16	Open area 14 m floor	450.00	Daily	Dry
17	TG roof and roof of PRDS	10862.48	Monthly	Dry
18	Mill bay	3025.00	Daily	Wet
19	Mill platform	1095.00	Daily	Dry
20	RC Feeder floor	2489.00 x*2=4978	Twice in a day	Dry
21	AC plant & chemical dosing room	536.00	Daily	Dry/wet as per EIC
22	Roof of LP dosing and AC plant	536.80	Monthly	Dry
23	Deaerator floor and platform	3025.00	Weekly	Wet
24	Boiler zero meter	11000.00	Daily	Wet
25	Boiler different floors,	25412.00	Alternate day	Dry
26	Road between ESP and Boiler	2475.00	Daily	Wet
27	ESP control room and MCC	840.00	Daily	Dry or wet as per EIC
28	Roof of ESP	840.00	Monthly	Dry
29	ESP pent house	3328.00	Weekly	Dry
30	ESP to ID fan fencing (open area)	20032.00	Daily	Dry or wet as per EIC
31	New concrete area up to switchyard road	2943.00	Forth Nightly	Dry / Wet
32	H ₂ storage shed & lube oil cell	714.60	Daily	Dry
33	All ZLD Pit & surrounding area	1169.70	Daily	Dry
34	Roof of DG Set, Compressor house , switchyard Compressor house	872	Monthly	Dry
35	ETP-2 PH & surrounding pit area	100	Daily	Dry
36	ETP open area	800	Weekly	Dry

Area calculation as per frequency:

Sl. No.	Description	Total Area (m ²)	For one day (m ²)
1.	Alternate day	25808.00	12904.00
2.	Daily	55482.52	55482.52
3.	Fortnightly	2943	196.2
4.	Monthly	13111.28	437.04
5.	Thrice in a day	6880.67 x3	20642.00
6.	Twice in day	2489 x 2	4978.00
7.	Weekly	34586.72	5931.12
8.	Twice in week	1169.70	389.90

		Total	100960.80
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As per our assessment minimum requirement for above activities in one day operation is 36 (thirty six) USW.

SECTION – 2 (For all working days except Sundays & holidays i.e. for 611 days)

- (i) Cleaning of all the equipments of Unit # I,II,III&IV TG area and their related ducts, pipe lines, trenches, specially as per the list and frequency mentioned against them with the help of brooms, cotton clothes, detergent powder etc.

Sl. No.	Name of equipments	Frequency of cleaning
1.	BFP-A &B and trenches	Daily & trenches fortnightly
2.	CEP, condenser neck	Daily , When unit is under shutdown
3.	Seal oil, vacuum pump, H ₂ feeding system	Daily
4.	Lub oil cooler & centrifuge m/c	Daily
5.	Turbine Bearing & Generator surroundings	Daily and when unit under shutdown.

- (ii) Cleaning of all the equipments of Unit # I,II,III&IV boiler area and related ducts and pipelines specifically as per list and frequency mentioned against them with the help of brooms, cotton clothes, detergent powder etc.

Sl. No.	Name of equipments	Frequency of cleaning
1.	PA fans (A&B) & its lube oil system	Daily
2.	FD fans (A&B) & its lube oil system	Daily
3.	ID fans and surrounding	Daily.
4.	Mills (A,B,C,D,E,F&G) & pipe line	Alternate day
5.	Seal air fans, CT pumps	Alternate day
6.	APH guide bearings & surroundings.	Alternate day

As per our assessment minimum requirement for above activities in one day operation is 02 (two) USW for one unit.

The activities detailed above for one day for one unit shall constitute one job for Section – 2

SECTION –3: Housekeeping for all Sunday & Holidays (i.e 120 days) for Units I,II,III & IV:

- 3.1 The work under the scope of work is proper cleaning, sweeping, washing, removal of any garbage/debries as per area frequency chart given below :

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	UCB & MCB	1392.31 x 2* =2784.62	*Twice in day	Wet
2	RC feeder	2489.00	One time	Dry
3	6.6 KV Switchgear	1000.00	One time	Dry or wet as per EIC
4	TG '0' m	7837.50	One time	Dry
5	TG '9' m	*5755.00 x 2 =11510.00	*Twice in day	Dry or wet as per EIC
6	Boiler '0' m	11000.00	One time	Wet
7	ESP to ID fan fencing (open area)	10000.00	One time	Wet
8	ESP control room & MCC	500.00	One time	Dry
9	ESP road	2875.00	One time	Wet
10	Dry Ash Control Room	89.4	One time	Dry / Wet
	Total	50085.52		

- 3.2 H₂ & CO₂ cylinder shifting, assistance in heavy occasional job like oil coolers draining, manual operation of various valves/ dampers.

As per our assessment minimum requirement for above activities in one day operation is 20 (twenty) USW.

SECTION –4:

Cleaning, sweeping of ETP-2 pump house and surrounding area, 11 KV switchyard and switchgear in plant premise, CISF Barrack, Cleaning of main drain strainer, removal of oil from ETP-2 with manual / electrical pump, Operation of clear water pump, adjustment of slotted skimmer pipe to avoid water pollution.

As per our assessment minimum requirement of above activities in one day operation is two (02) USW.

The activities detailed above for one day operation shall constitute one job for Section – 4

SECTION –5 Provision for the deployment of sufficient numbers of USW man days as and when required at the short notice to cover the contingent type of jobs inside and outside of plant area as per instruction of EIC such as-

1. For Monsoon period to establish coal flow in RC feeders by poking, removal of choking from Bunker outlet to feeder and to hammer RC feeder to establish uninterrupted coal flow through RC feeders. To clean feeder area of accumulated coal thus obtained from feeder by choking & poking to dispose of the accumulated coal from feeder floor to Boiler zero meter area through discharge chute. Cleaning/washing of area will be done by the contractor in running units after general shift hours.

2. In case of emergency to save ESP field from outage proper and complete evacuation of ash from ESP hoppers in both wet and dry mode of system and cleaning of different floors, structures platforms & trenches, regular hammering of ESP flushing apparatus, hoppers drain pipes and bottom portion of ESP hopper. Fly ash removal and choking removal from outgoing pipelines and its associated hoppers in dry and wet condition.

3. Up keeping of housekeeping standard in VIP visit.

4. Unit re-commissioning after overhauling.

5. Diversion of adequate quantity of raw water to make up pump house from Mahripur canal.

6. Exposure of new area by picking scrap, removal of debris etc.

7. Assistance during chemical cleaning of condenser tube, round the clock operation or in general shift.

However, the total utilization will be 4000 man days during the tenure of contract with a variation of $\pm 100\%$ and solely depends on discretion of Engineer In-charge.

SECTION – 6 Three munsies are to be deployed in general shift to look after the job related as per scope of work as per the instruction of EIC from time to time. However munshi qualification and his suitability to carry out the housekeeping work shall be examined. Munsi should report to Engineer in-charge for taking instructions as well as he has to give feed back of the executed job. He should prepare proper record of loading and unloading of Hydrogen cylinders for refilling and daily report of available Hydrogen cylinders in units and storage shed.

As per our assessment minimum requirement for above activities in one day operation is 03 (Three) SSW for all Units.

The activities detailed above for one day for all unit shall constitute one job for Section – 6

Part –D “Housekeeping of Off-site area”

Scope of work

SECTION – 1 (For all working days except Sundays & holidays i.e. for 611days)

[A] Proper and complete cleaning, sweeping, washing, removal of any garbage in service building, maintenance building, open area between service building & maintenance building, model room, library room, car & cycle stand, workshop & new workshop building, dry ash control room, MCC room, cooling tower area of dry ash system, cleaning of all the floors, roof, walls, external surface of the buildings, removal of cobweb from all rooms, offices.

[B] Proper and complete cleaning, sweeping, water washing, of floor, roof and walls, equipments cleaning, pipeline cleaning, removal of cobweb etc. and cleaning of panel from out side, of the following locations, removal of any garbage of the below mentioned locations/ buildings and its related switchgears.

1. Ash slurry pump house & switchgears (6.6 KV & 415 V), transformer area.

2. C.W. pump house & switchgears, transformer areas. New concrete area and around CW out let ducts.
3. BCW pump house & complete concrete area.
4. C. T. fans roof (for CW & BCW)
5. Reservoir pump house & intake channel RCW pump house and RCW switchgear room complete up to boundary wall.
6. FO pump house excluding dyke and tanks area channel.
7. Cleaning of intake channel grill to makeup pump house from canal.
8. Cleaning of BCW & OWRP pit.

[C] Housekeeping of water treatment Plant:

1. Cleaning of PT plant, PT & CW chlorination Plant : The job comprises of cleaning of GSF floor, alum and lime soln. Tank floor, filter house ground floor , PT plant MCC room, PT & CW chlorination plant, alum store , total new chemical store building, oil and coal lab, GSF v/v pit, clarifloculator area, cleaning of staircase, cleaning of roof, floor & wall, entire PT plant cobweb cleaning, cleaning of pipe lines , valves, equipments, hand railing, entrance of PT plant & surrounding area including nearby roads, grass cutting around clarifloculator & filter house to road side etc and daily water washing/moping of the floors including cleaning of surrounding drains & cable trenches.

2. Cleaning of DM Plant & Softening Plant: The job includes cleaning of all softeners & DM stream vessels, pipe lines, valves, equipment, D/G Towers, storage tank area, floor area of DM plant buildings, MCC room cum control room, store room, acid & caustic storage tank area, effluent disposal pit surrounding floor area, Sulphuric acid dosing room area, entrance of DM plant building from both side, entire DM plant cobweb cleaning and daily water washing of the above including cleaning of surrounding drains & cable trenches. Grass cutting from nearby building to road side. ,Shift In charge office rooms, testing lab and furniture, racks, lab instrument.

3. DM plant central lab: The job comprises of daily cleaning of 1st floor labs, office rooms and furniture, racks, lab instrument, stair cases, hand railing, cleaning of roof, floor, wall etc.

4. CW chemical house, MCC room and clarifloculator area- Cleaning of CW chemical house, MCC room and clarifloculator area, removal of cobweb etc. Cleaning of open area near clarifloculator and CW chemical house.

[D] Cleaning of Fire Station, in plant area:

Proper and complete cleaning, sweeping, washing, removal of any garbage in fire station. Cleaning of all the floors, roof, walls, external surface of the buildings, removal of cobweb from all rooms should always be available in cleaned condition.

Section-1 Area to be cleaned and their frequency as per SOW:

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	Service building	3052.5 x 2* = 6105.00	Twice daily*	Dry/Wet
2	Maintenance building (shed)	2960 x 2 * = 5920	Twice daily*	Dry/wet
3	Model room & Library room	640.00	Daily	Dry/wet
4	Open area between service building & maintenance building	1680	Weekly	Dry/wet
5	Open area towards ICH (Service building)	640.00	Daily	Dry/wet
6	Car & cycle stand (near model room)	2070	Twice in a week	Dry/wet
7	Ash slurry pump house & switchgear (6.6 KV & 415 V)	1615.68	Daily	Dry/wet as per EIC
8	Open area of Ash slurry pump house and transformer area	801.52	Alternate day	Dry
9	(-) m cable gallery (6.6 KV & 415	634.76	Fortnightly	Dry

	V)			
10	Workshop & new workshop building	2474.86	Daily	Dry/Wet as per EIC
11	Open area of workshop	1036.65	Alternate day	Dry
12	CW pump house, switchgear area.	1418.00	Daily	Dry/wet as per EIC
13	New concrete area, transformer and CW outlet ducts.	1961.00	Fortnightly	Dry/wet
14	(-) m cable gallery of CW pump house MCC	648.00	Fortnightly	Dry
15	Roof of CT – 1,2,3&4	2672.24	Fortnightly	Dry
16	BCW pump house	189.00	Daily	Dry/wet
17	Complete concrete area(BCW PH)	1357.00	Fortnightly	Dry/wet
18	Roof of CT for BCW	171.83	Fortnightly	Dry
19	FO pump house with open area excluding railway line, dyke and tanks area.	1824	Daily	Dry/wet
20	Reservoir pump house, RCW pump house and RCW switchgear room.	1019	Daily	Dry/wet
21	PT plant & CW chlorination plant & new building	$1153.75 \times 2^* = 2307.50$	Twice daily*	Dry/wet
22	DM plant and softening plant & central lab	$1280.00 \times 2^* = 2560.00$	Twice daily	Dry/wet
23	Open area DM plant	$2234.50 \times 2^* = 4469.00$	Twice daily*	Dry
24	Dry ash control room , MCC room ,cooling tower area	553	Daily	Dry / Wet
25	Cleaning of CW chemical house, MCC room and clarifloculator area	500	Daily	Dry/wet
26	Open area near clarifloculator and CW chemical house	500	Twice in a week	Dry/wet
27	Fire station	1487.00	Daily	Dry/ wet
28	Fire station open area	1515.00	Daily	Dry
29	Cleaning of wall	25000	Weekly	Dry
30	Roof of CW PH, BCW PH, FO PH, AS PH, Reservoir PH, RCW MCC, work shop office, service building.	6978	Monthly	Dry
31	Open area near 6.6kv AS PH MCC, back side of AS PH, front of work shop, Reservoir PH & RCW MCC.	2558	Monthly	Dry

Sl. No.	Description	Total Area (m ²)	For one day (m ²)
01.	Alternate day	1838.17	919.09
02.	Daily	35433.04	35433.04
03.	Fortnightly	7444.83	496.32
04.	Weekly	26680.00	4446.67
05.	Twice in week	2570.00	856.66
06.	Monthly	9536.00	317.87

		Total	42468.66
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As per our assessment minimum requirement of above activities in one day operation is fourteen (14) USW.

SECTION – 2: For operation support the sufficient manpower is to be deployed daily in all the three shifts i.e. from 06:00 hrs. to 14:00 hrs., 14:00 hrs to 22:00 hrs. and 22:00 hrs. to 06:00 hrs. including Sunday and Holidays, normally at CW pump house and BCW pump house to carry out the following jobs as per SOW and instruction of EIC.

- i) Assisting operation staff to carry out heavy jobs like manual operation of valves etc under their supervision.
- ii) To carry out the dak, log sheets, official paper from the remote location to main plant.
- iii) Any other job required for operation support as and when directed by EIC/ Unit control engineer/ Off-site area engineer/Shift in-charge.

As per our assessment minimum requirement of above activities in one shift operation is one (01) USW.

The activities detailed above in one shift shall constitute one job for Section – 2

SECTION -3: Housekeeping of Off-site area (i.e. 120 days) for Sunday & Holidays:

1. The work under SOW is proper cleaning, sweeping, washing, removal of any garbage/debris of following area as per area frequency chart as given below :

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	Workshop building	1237.43	One time	Dry or wet as per EIC
2	Ash slurry pump house	1000.00	One time	Dry or wet as per EIC
3	CW pump house	1000.00	One time	Dry or wet as per EIC
4	BCW pump house	100.00	One time	Dry or wet as per EIC
5	Reservoir pump house	500.00	One time	Dry or wet as per EIC
6	FO pump house	410.00	One time	Dry or wet as per EIC
7	PT plant & chlorination plant	950.00	One time	Dry or wet as per EIC
8	DM & softening plant & lab	950.00	One time	Dry or wet as per EIC
9	Service Building	52.00	One time	Dry
10	Fire station	1300.00	One time	Dry or wet as per EIC
	Total	7499.43 ≈ 7500.00		

As per our assessment minimum requirement of above activities in one day operation is three (03) USW.

SECTION –4: Sanitation work in plant area:

Daily hygienic cleaning of toilets and urinal by providing naphthalene ball and odonil etc. in all the toilets. The toilets of all buildings should always be available in cleaned conditions. The daily frequency of cleaning will be minimum twice in a day.

Number of toilets for daily cleaning other than Sunday & holidays = 54 x 2 x 611

Number of toilets for Sunday & holidays = 30 x 2 x 120

As per our assessment minimum requirement of above activities in one day operation is four (04) USW

SECTION –5:

One munsii is to be deployed in general shift to look after the job related as per scope of work and as per the instruction of EIC from time to time. However munsii qualification and his suitability to carry out the housekeeping work shall be examined. Munsii should report to engineer in-charge for taking instructions as well as he has to give feed back of the executed job also.

As per our assessment minimum requirement of above activities in one day operation is one (01) SSW.

The activities detailed above for one day shall constitute one job for Section – 5

STAGE - II

Subject: “Stage-II Housekeeping of Main Plant & off site area and deashing of Hoppers, Choking Removal from Feeder, Handling of coal Mill Reject,” at NTPC-Tanda (2x660MW).

Part A-Deashing of Bottom ash hoppers, ESP hopper, choking removal from feeder and operation of mill reject pyrite gate

Scope of Work

SECTION – 1 Operation of mill reject pyrite gate & Cleaning of mill area

For operation support the sufficient numbers of unskilled manpower is to be deployed daily in all the three shifts i.e. from 06:00 hrs to 14:00 hrs, 14:00 hrs to 22:00 hrs and 22:00 hrs to 6:00 hrs. including Sunday and Holiday in Unit # 5 and 6. Whether running or under shut down to carry out the following jobs as per the instructions of EIC.

- 1.7 Assisting operation staff during, mill purging, mill pyrite hopper poking as well as Mill rejects removal from its pyrite hopper and stacking it at a place(s) specified by UCE/EIC in round the clock basis.
- 1.8 Assistance in heavy occasional jobs like oil coolers draining manual operation of various valves / dampers etc. in round the clock operation, H₂, CO₂ cylinder shifting after general shift hours if required.
- 1.9 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 02 (two) USW in each Unit.

The activities detailed above shall constitute one job for Section – 1

SECTION – 2 Removal of choking from bunker to feeder pipe, bringing down coal from bunker to feeder of Unit # 5 and 6

Unskilled manpower is to be deployed in all three shifts i.e. from 6:00 hrs. to 14:00 hrs., 14:00 hrs. to 22:00 hrs. and 22:00 hrs to 6:00 hrs. including Sundays and holidays in Unit # 5 and 6.

- 2.1 To establish coal flow in RC feeders by poking, removal of choking from Bunker outlet to feeder and to hammer RC feeder to establish uninterrupted coal flow through RC feeders.
- 2.2 To clean feeder area of accumulated coal thus obtained from feeder by choking & poking.
- 2.3 To dispose of the accumulated coal from feeder floor to Boiler zero meter area through discharge chute as specified by EIC.
- 2.4 Cleaning/washing of area will be done by the contractor in running units after general shift hours.
- 2.5 Assisting operation staff to carry out heavy jobs like manual operation of valves, dampers etc. under their supervision, during normal running as well as during shut down/ overhauling of the unit in round clock basis.
- 2.6 Distributions of log sheets, Dak, inter departmental paper, notice board display etc. as and when required, during round the clock operation.
- 2.7 Cleaning of UCB desk and furniture in every shift.
- 2.8 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 02 (two) USW in each Unit.

The activities detailed above shall constitute one job for Section – 2.

SECTION – 3 Deashing of Bottom ash hoppers and Ash evacuations from ESP hoppers of Unit # 5 and 6.

Sufficient numbers of unskilled man power is to be deployed in all three shifts i.e. from 6:00 hrs. to 14:00 hrs, 14:00 hrs. to 22:00 hrs. and 22:00 hrs to 6:00 hrs. including Sundays and holidays in Unit # 5 and 6.

- 3.8 Bottom ash hopper deashing, bottom ash hopper clinkers & area cleaning, stacking the ash/clinkers at a place (s) specified by UCE / EIC on round clock basis.

- 3.9** Bottom ash hopper gates operations and hydro-ejector valves operation as per the direction of UCE/EIC in round the clock operation.
- 3.10** Proper and complete evacuation of ash from ESP hoppers in both wet and dry mode of system and cleaning of different floors, structures platforms & trenches, regular hammering of ESP flushing apparatus, hoppers drain pipes and bottom portion of ESP hoppers.
- 3.11** Fly ash removal and choking removal from outgoing pipelines and its associated hoppers 108 nos. in dry and wet condition, keeping the flushing apparatus clean of any debris or ash accumulation.
- 3.12** Removal of ash, dust, debris etc from zero meter floor ESP and keep it always clean by water washing / brooming.
- 3.13** Regular operation of plate valves, hammering & removal of choking should be carried out in each unit of the following hoppers in each shift –
- i) Economizer hopper - 08 nos. in each unit
 - ii) Air pre-heater hopper - 06 nos. in each unit.
 - iii) ESP hoppers - 108 nos. in each unit
 - iv) All Duct Hoppers
 - v) Any other area as specified by EIC/UCE
- 3.14** Cleaning of ESP control Room building in every shift.
- 3.15** Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 04 (four) USW in each Unit.

The activities detailed above shall constitute one job for Section – 3

SECTION – 4 Assisting the Operation staff in control room 5 all the three shifts i.e. from 06:00 hrs. to 14:00 hrs., 14:00 hrs to 22:00 hrs. and 22:00 hrs. to 06:00 hrs. including Sunday and Holidays

- 4.1 Cleaning of control Room desk and furniture in every shift.
- 4.2 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 01 (one) USW.

The activities detailed above shall constitute one job for Section – 4

SECTION – 5 Assisting the Operation staff in control room 6 all the three shifts i.e. from 06:00 hrs. to 14:00 hrs., 14:00 hrs to 22:00 hrs. and 22:00 hrs. to 06:00 hrs. including Sunday and Holidays

- 4.1 Cleaning of control Room desk and furniture in every shift.
- 4.2 Any other job required for day to day operation support as and when directed by the EIC/SCE/ASCE/UCE.

As per our assessment minimum requirement for above activities in one shift operation is 01 (one) USW.

The activities detailed above in one shift shall constitute one job for Section – 5

SECTION – 6 Three munsies (03) are to be deployed in shift, to look after the job related as per scope of work and as per the instruction of EIC from time to time. However munshi qualification and his suitability to carry out the work as per SOW shall be examined by EIC. Munsis should report to EIC/SCE/ASCE/UCE for taking instructions and should be available during his duty for taking instructions as well as he has to give feed back of the executed job also.

As per our assessment minimum requirement of above activities in one shift operation is one (01) SSW.

The activities detailed above in one shift shall constitute one job for Section – 6

PART- B

Lifting & disposal of CMR / Fresh coal / debris / clinkers from Unit #5 and 6.

Section-1 Lifting & disposal of CMR.

Scope of work

Lifting of mill rejects from the mills basement of all Units i.e. from Unit # 5 and 6 loading into tractor trolley with the help of sufficient number of USW and its transportation to the mill rejects yard, as specified by the Engr I/C. Which will be inside or outside the plant premises approximately 3-4 Km away from the mill basement and its dumping in the yard in proper way. In the similar manner Ash/clinkers etc. are also to be lifted and transported from the bottom ash hopper areas, fly ash area to the place(s) as specified by the Engr. I/C, which will be inside or outside the plant premise approximately 3-4 km away from the bottom ash area. The contractor has to handle whole mill rejects, clinkers / bottom ash etc. generated on the day to day basis and is to be removed from the Units on daily basis. The payment will be made purely on per cubic meter handled basis, which includes lifting, transportation and dumping at place (s) as specified by Engr. I/C, inside or outside plant premises, for the total mill reject/bottom ash/ clinkers etc. handled by the contractor.

1.1 The contractor shall deploy the requisite number of tractors trolley with sufficient labour per day for handling mill rejects and he has to clear the rejects from mill areas on daily basis.

1.2 The mill rejects/clinker etc. generated per day may vary from 0 m³ to 30 m³. The above data is indicative only. However depending upon the mill & coal condition the quantity of mill reject may exceed beyond 30 m³ which is to be removed from the Units on daily basis.

1.5 In case of bulk generation of mill rejects/bottom ash / clinker etc. the contractor has to deploy additional/ tractors trolley to remove the rejects / clinker speedily on the same day. Contractor has to work on round the clock basis and keep the area clean in the situation as described in point no. 1.2

1.6 The work is to be executed on all the days in a week including Sunday, National Holidays, gazetted holidays etc. as directed by EIC.

1.7 Contractor shall transport coal mill rejects/ash/ clinkers etc. to place (s) inside or outside of the premises as directed by Engr. I/C but in any case the distance will not be more than 5 km from the lifting place. However daily minimum quantity is not assured.

1.8 Quantity of coal mill reject may vary $\pm 60\%$.

Section-2 Lifting & Transportation of fresh coal (Raw coal) from mill zero meter area & disposal in coal yard from Units # 5 & 6.

Scope of work :

Lifting of Raw & fresh coal that has fallen from feeder floor to the mill zero meter areas of Unit # 5 and 6 loading into tractor trolley with the help of sufficient nos. of USWs & its transportation to the coal yard only and approximately 3-4 km away from the mill zero meter. This quantity may vary from 0 m³ to 150 m³ on any day & the contractor should be able to lift & transport the above quantity on daily basis. The payment will be made on actual quantity lifted on cubic meter basis which includes lifting, transportation & dumping at places/ coal yard as specified by EIC.

2.8 The contractor shall deploy the requisite number of tractor trolley with sufficient labour per day for handling raw coal from zero meter.

2.9 The fresh coal handled/generated per day may vary from 0 m³ to 150 m³; however payment shall be made on actual quantity lifted on cubic meter basis in a particular day. However, minimum daily quantity is not assured.

2.10 In case of bulk generation of fresh coal from feeder floors to Mill zero meter areas, the contractor has to deploy additional tractor trolley to remove the same on the same day.

2.11 Contractor has to work on round the clock basis and keep the area clean in the situation as described in point no. 2.3.

2.12 The work is to be executed on all the days in a week including Sunday, national holidays, gazetted holiday etc. as directed by Eng. I/C.

2.13 Transportation of fresh coal accumulated after emptying of coal bunkers during overhauling of units to avoid any delay in overhauling activities.

2.14 Quantity may vary to $(\pm) 100\%$.

Section-3. Lifting & Transportation of debris and garbage's from Boiler, TG & GT areas of units 5 & 6 and Off-site areas (Fire water pump house, DM plant, Service water pump house,

Air Compressor house, Switch Yard control room, GIS building, FO pump House, Ash Handling control room, ESP control rooms, CW Pump house, Make up water pump house, Ash slurry Pump House, Aux boiler, AC plant, DG Set room, Service building of St-2 and any other building as directed by EIC).

Scope of Work

Lifting of debris and garbage generated daily from Boiler, TG & GT sides of all Units and from off-site areas (Fire water pump house, DM plant, Service water pump house, Air Compressor house, Switch Yard control room, GIS building, FO pump House, Ash Handling control room, ESP control rooms, CW Pump house, Make up water pump house, Ash slurry Pump House, Aux boiler, AC plant, DG set room, Service building of St-2 and any other building as directed by EIC) Loading into tractor trolley with the help of sufficient numbers of USWs and its transportation to the dumping yard as specified by Engr. I/C which will be inside or outside the plant premises approximately 3-4 km away.

The contractor has to handle the total quantity of garbage's generated on day to day basis. The payment will be made purely on actual no. of trips made which includes lifting, transportation & dumping at place (s) as specified by EIC.

- 3.7 The contractor shall deploy the requisite number of tractors trolley with sufficient labour per day for handling garbage's and he has to clear the same on daily basis.
- 3.8 The garbage and debris generated per day may vary, however payment shall be made on actual no. of trips made/done. However, minimum trips are not assured.
- 3.9 In case of bulk generation of debris and garbage as on particular day, the contracting agency has to deploy additional tractor trolley to remove the garbage's speedily on the same day.
- 3.10 Contractor has to work on round the clock basis and keep the area clean in the situation as described in point no. 3.3
- 3.11 The work is to be executed on all the days in a week including Sunday. National holidays, gazetted holidays etc as directed by Engr. I/C if required.

Part C: Main Plant Housekeeping

Scope of work:

SECTION – 1 (For all working days except Sundays & holidays i.e. for 611 days)

The scope of work is proper and complete cleaning, sweeping, washing, removal of any garbage / debris from generator transformer yard, TG- area, Boiler, Mill bay, bottom ash hoppers, FD & PA fans, ESP, ID fan area up to chimney including adjacent road, DG set area, Air compressor house, switchyard control room, GIS room, Cable gallery, lube oil cell building, ESP control room, AC Plant. The area to be covered under this will be between road adjacent to chimney including the drain and brick on edge of the road to switchyard road fencing but including Switchyard control room and GIS room and other area mentioned below.

- 1.11 Cleaning of complete area of generator transformer yard including transformers and CW valve.
- 1.12 Cleaning of all the floors, walls structure and staircases from A row to C row in TG area, TG hall including the cleaning of switchgear (HT/ LT on 3.5 m, 12 m and 28 m), Aux PRDS, chemical dosing rooms, AC plant, originate system & Deaerator floors, DMCW tank floor, cable gallery (below 3.5 m, 8.5m, 12 m and 24 m), UPS (8.5M), Battery room (3.5M,8.5,M) air washing unit, AHU, UCB and all remaining rooms and offices in the above area, excluding C&I/Electrical panels at all elevations up to the roof top of panels. This also includes the cleaning of all surface drains, pipe trenches, cable tray and cable trenches in the above mentioned area.
- 1.13 Cleaning of all the floors, walls structure and staircases behind C row including the cleaning of mill bay, mill platform, feeder floor and adjacent area.
- 1.14 Cleaning of whole Boiler up to ESP road (complete) at all elevations of Boiler including cleaning of Tanks and duct- surfaces, external surface of the Boiler auxiliaries, floors, walls, roofs, all the surface drains, pipe trenches and cable trenches.
- 1.15 External water washing of whole boiler (during Overhauling period) and mill area of Unit 5 and 6 as and when directed by EIC.

- 1.16** Ceiling, walls and other structures of all buildings as mentioned above should be dusted regularly and cobweb etc. including on roof top to be removed at regular intervals. (Includes all buildings between A to C row)
- 1.17** Cleaning, sweeping, washing of floor, walls, structure, trenches, Ash Handling system, buffer hopper area of dry ash system, MRCS compressor house, ESP control rooms, MCC rooms of ESP, pent house of ESP, Cable gallery, Transformer area and open area surrounding of ESP from chimney fencing road to ESP road, complete area of ID fan, ducts, etc.
- 1.18** Housekeeping of DG set area, Air compressor house, lube oil cell, AC plant and concrete area of switchyard.
- 1.19** H₂, CO₂ cylinder shifting, lube oil drum shifting during emergency, assistance in heavy occasional job like oil coolers draining, manual operation of various valves/ dampers etc.

SECTION - 1: Area to be cleaned and their frequency as per SOW:

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	A -Row to switchyard fencing including CW v/v.	10200	Weekly	Dry or wet as per EIC
2	Cable galleries, AHUs, AC plant etc between BC Bay on all floors	4000	Weekly	Dry or wet as per EIC
3	ESP pent house	4200	Weekly	Dry
4	TG roof, DMCW tank and D/A tank Area	12000	Monthly	Dry
5	Roof of ESP	900	Monthly	Dry
6	Roof of DG Set, Compressor house , switchyard Compressor house	800	Monthly	Dry
7	DG set	160	Daily	Dry
8	A row to B row (TG '0' M)	8536	Daily	Dry or wet as per EIC
9	A row to B row (TG '17' M)	5570	Daily	Dry or wet as per EIC
10	TG (- 3.5) m Including MOT and FRF room and heater Bay and swgr	4311	Daily	Dry or wet as per EIC
11	B row to C row, Offices	2200	Daily	Dry once + wet once
12	UCB, CCR	900	Daily	Wet / Dry
13	Boiler zero meter including mill bay and adjacent road, All ZLD Pit & surrounding area, condenser pit.	21800	Daily	Wet /Dry as per EIC
14	Boiler different floors, including feeder floors	22700	Daily	Dry
15	Road between ESP and Boiler	2220	Daily	Wet
16	ESP control room and MCC	3676	Daily	Dry or wet as per EIC
17	ESP to Chimney (open area)	14800	Daily	Dry or wet as per EIC

Area calculation as per frequency:

Sl. No.	Description	Total Area (m ²)	For one day (m ²)
1	Weekly	18400	4600
2	Monthly	13700	527
3	Daily	86873	86873

	Total	118973	92000
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As per our assessment minimum requirement for above activities in one day operation is 32 (Thirty Two) USW.

SECTION – 2 (For all working days except Sundays & holidays i.e. for 611 days)

- (iii) Cleaning of all the equipments of Unit # 5 and 6 TG area and their related ducts, pipe lines, trenches, specially as per the list and frequency mentioned against them with the help of brooms, cotton clothes, detergent powder etc.

Sl. No.	Name of equipments	Frequency of cleaning
1.	BFPs and trenches	Daily & trenches fortnightly
2.	CEPs, condenser neck	Daily , When unit is under shutdown
3.	Seal oil system including related equipments, H ₂ /CO ₂ feeding system, generator related equipments	Daily
4.	Equipments in MOT and FRF room	Daily
5.	Turbine Bearing & Generator surroundings	Daily and when unit under shutdown.
6.	CPUs, DMCW, CLCW, PHE with related pumps including pipelines and trenches	Daily & trenches fortnightly
7.	Heaters including pipes	Daily

- (iv) Cleaning of all the equipments of Unit # 5 and 6 boiler area and related ducts and pipelines specifically as per list and frequency mentioned against them with the help of brooms, cotton clothes, detergent powder etc.

Sl. No.	Name of equipments	Frequency of cleaning
1.	PA fans & its lube oil system	Daily
2.	FD fans & its lube oil system	Daily
3.	ID fans including lube oil system and surrounding	Daily
4.	Mills & pipe line	Alternate day
5.	Seal air fans and any nearby pumps	Alternate day
6.	APH bearings & surroundings.	Alternate day
7.	BCP pumps	Alternate day

As per our assessment minimum requirement for above activities in one day operation is 04 (four) USW for one unit.

The activities detailed above for one day for one unit shall constitute one job for Section – 2

SECTION –3: Housekeeping for all Sunday & Holidays (i.e 120 days) for Units 5 & 6:

3.3 The work under the scope of work is proper cleaning, sweeping, washing, removal of any garbage/debries as per area frequency chart given below :

Sl. No.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	UCB	2140	*Twice in day	Wet
2	Switch Yard Control Room	400	One time	Wet
3	GIS Room	2389	One time	Dry
4	RC feeders	1600	One time	Dry
5	11/3.3/0.415 KV Switchgears	2740	One time	Dry or wet as per EIC
6	TG '0', 3.5,8.5, 17	13740	One time	Dry

	MTR			
7	Boiler '0' m	10340	One time	Wet
8	ESP to ID fans fencing (open area)	9800	One time	Wet
9	ESP control rooms & MCC	2320	One time	Dry
10	ESP road	800	One time	Wet
11	DAC	80	One time	Dry / Wet
	Total	46349		

3.4 H₂ & CO₂ cylinder shifting, assistance in heavy occasional job like oil coolers draining, manual operation of various valves/ dampers.

As per our assessment minimum requirement for above activities in one day operation is 16 (Sixteen) USW.

SECTION –4: Sanitation work in plant area:

Daily hygienic cleaning of toilets and urinal by providing naphthalene ball and odonil etc. in all the toilets. The toilets of all buildings should always be available in cleaned conditions. The daily frequency of cleaning will be minimum twice in a day.

Number of toilets for daily cleaning other than Sunday & holidays = 54 x 2 x 611

Number of toilets for Sunday & holidays = 30 x 2 x 120

As per our assessment minimum requirement of above activities in one day operation is four (04)

The activities detailed above for one day operation shall constitute one job for Section – 4

SECTION –5 Provision for the deployment of sufficient numbers of USW man days as and when required at the short notice to cover the contingent type of jobs inside and outside of plant area as per instruction of EIC such as-

1. For Monsoon period to establish coal flow in RC feeders by poking, removal of choking from Bunker outlet to feeder and to hammer RC feeder to establish uninterrupted coal flow through RC feeders. To clean feeder area of accumulated coal thus obtained from feeder by choking & poking to dispose of the accumulated coal from feeder floor to Boiler zero meter area through discharge chute. Cleaning/washing of area will be done by the contractor in running units after general shift hours.

2. In case of emergency to save ESP field from outage proper and complete evacuation of ash from ESP hoppers in both wet and dry mode of system and cleaning of different floors, structures platforms & trenches, regular hammering of ESP flushing apparatus, hoppers drain pipes and bottom portion of ESP hopper. Fly ash removal and choking removal from outgoing pipelines and its associated hoppers in dry and wet condition.

3. Up keeping of housekeeping standard in VIP visit.

4. Unit re-commissioning after overhauling.

5. Diversion of adequate quantity of raw water to make up pump house from Mahripur canal.

6. Exposure of new area by picking scrap, removal of debris etc.

7. Assistance during chemical cleaning of condenser tube, round the clock operation or in general shift.

However, the total utilization will be 4000 man days during the tenure of contract and solely depends on discretion of Engineer In-charge.

SECTION – 6 Two munsies are to be deployed in general shift to look after the job related as per scope of work as per the instruction of EIC from time to time. However munshi qualification and his suitability to carry out the housekeeping work shall be examined. Munsi should report to

Engineer in-charge for taking instructions as well as he has to give feed back of the executed job. He should prepare proper record of loading and unloading of Hydrogen cylinders for refilling and daily report of available Hydrogen cylinders in units and storage shed/Hydrogen Plant.

As per our assessment minimum requirement for above activities in one day operation is 02 (Two) SSW for all Units.

**The activities detailed above for one day for all unit shall constitute one job for Section – 6
Part –D “Housekeeping of Off-site area”**

Scope of work

SECTION – 1 (For all working days except Sundays & holidays i.e. for 611 days)

[A] Proper and complete cleaning, sweeping, washing, removal of any garbage in service building, maintenance building, open area between service building & maintenance building, car & cycle stand, workshop building, dry ash control room including adjacent MCC room , cooling tower area of dry ash system, cleaning of all the floors, roof, walls, external surface of the buildings, removal of cobweb from all rooms, offices.

[B] Proper and complete cleaning, sweeping, water washing, of floor, roof and walls, equipments cleaning, pipeline cleaning, removal of cobweb etc. and cleaning of panel from out side, of the following locations, removal of any garbage of the below mentioned locations/ buildings and its related switchgears.

9. Ash slurry pump house, adjacent building & switchgears(HT and LT), transformer area.
10. DAES Control room and adjacent MCC/control room.
11. TAC Room and adjacent switchgear room
12. C.W. pump house, chlorination room & switchgears, transformer areas. Adjacent concrete area and around CW out let ducts.
13. HCSD pump house including adjacent VFD room.
14. Raw water pumps surrounding concrete area.
15. FO pump house and switchgear excluding dyke and tanks area channel.
16. CPU control room, adjacent switchgear room & chemical tanks area.
17. Fire water pump house including adjacent switchgear and concrete area & storage tank area.
18. Aux Boiler including control room of aux boiler and adjacent MCC room and Day oil tank area.
19. Adjacent concrete area of both NDCT.
20. Any other building constructed in the adjacent area during the contract period.

[C] Housekeeping of water treatment Plant:

Cleaning of PT plant, PT chlorination Plant, DM Plant, Service water pump house, Labs , Chemical House, MCC room and clarifloculator area etc: The job comprises of cleaning of GSF floor, alum and lime soln. Tank floor, filter house ground floor , PT plant MCC room, PT & CW chlorination plant, alum store , chemical store building, oil and coal lab, clarifloculator area, cleaning of staircase, cleaning of roof, floor & wall, entire PT plant cobweb cleaning, cleaning of pipe lines , valves, equipments, hand railing, entrance of PT plant & surrounding area including nearby roads, grass cutting around clarifloculator & filter house to road side etc and daily water washing/moping of the floors including cleaning of surrounding drains & cable trenches.

The job also includes cleaning of all DM stream vessels, pipe lines, valves, equipment, D/G Towers, storage tank area, floor area of DM plant buildings, MCC room and control room, store room, acid & caustic storage tank area, effluent disposal pit surrounding floor area, Sulphuric acid dosing room area, entrance of DM plant building from both side, entire DM plant cobweb cleaning and daily water washing of the above including cleaning of surrounding drains & cable trenches. Grass cutting from nearby building to road side, Shift In charge office rooms, testing lab and furniture, racks, lab instrument. It also includes Cleaning of CW chemical house, MCC room and clarifloculator area, removal of cobweb etc. Cleaning of open area near clarifloculator and CW chemical house, any office and all floors of building in the chemistry area.

Section-1 Area to be cleaned and their frequency as per SOW:

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	Fire water pump house, its MCC and adjacent area	1780	One time	Wet
2	Chemisrty department area inclusive of all PT plant, DM Plant, Service water pump house, Tanks, Labs, Offices, MCCs and other facilities in the area (All floors)	25088	One time	Wet
3	CW pump house, Its Chlorination plant, MCC and Adjacent area	1576	One time	Dry
4	Service Building	5550	One time	Dry
5	CPU Area including MCC and adjacent Area including HCSD pump house area	6780	One time	Dry or wet as per EIC
6	Ash handling control room, Ash slurry pump house, TAC room, adjacent MCCs, Seepage water pump house and surrounding area and tanks	12786	One time	Dry
7	Aux Boiler, its Control room, MCCS, Day oil Tank and surrounding area	2320	One time	Wet
8	FO Pump House, MCCs and surrounding area	603	One time	Wet
9	Makeup pump house, MCCs and surrounding area	560	One time	Dry
10	Raw water pump house, MCCs and surrounding area	680	One time	Wet
	Total	57723		

As per our assessment minimum requirement of above activities in one day operation is Twenty (20) USW.

SECTION -2: Housekeeping of Off-site area (i.e. 120 days) for Sunday & Holidays:

2. The work under SOW is proper cleaning, sweeping, washing, removal of any garbage/debris of following area as per area frequency chart as given below :

Sl. no.	Description of area	Approximate floor to be cleaned (m ²)	Frequency of cleaning	Type of cleaning
1	Offices in Chemisrty department area including Labs, and other facilities in the area	10800	One time	Wet

2	CW pump house and Its Chlorination plant	1800	One time	Dry
3	CPU Area including HCSD pump house area	2500	One time	Dry or wet as per EIC
4	Ash handling control room, Ash slurry pump house, TAC room and surrounding area and tanks	12136	One time	Dry
5	FO Pump House	500	One time	Wet
6	Makeup pump house	560	One time	Dry
7	Raw water pump house	680	One time	Wet
	Total	28976		

As per our assessment minimum requirement of above activities in one day operation is Ten (10) USW.

SECTION –3:

One munsis are to be deployed in general shift to look after the job related as per scope of work and as per the instruction of EIC from time to time. However munsis qualification and his suitability to carry out the housekeeping work shall be examined. Munsis should report to engineer in-charge for taking instructions as well as he has to give feed back of the executed job also.

As per our assessment minimum requirement of above activities in one day operation is one (01) SSW.

The activities detailed above for one day shall constitute one job for Section – 3

Special Terms and conditions

1. The contractor shall have to coordinate the job on regular basis and will be responsible for completion of the assigned job to be done under this contract, and will receive instructions from time to time from Engineer-in-Charge or his authorized representative. In this regard contractor will submit compliance report to EIC on daily basis.
2. During emergencies, the Engineer-in-charge shall have option to get the work done from the contractor in area other than that specified under the scope of work. The contractor has to attend any emergency work on short notice when ever required.
3. Before start of the work, the contractor should submit the documentary proof of labour license, and group personal accident insurance policy etc. for all engaged employees under this contract.
4. If any workman sustains any minor/major injury while on duty, the contractor shall bear all the Expenditure towards medical treatment and compensation without any extra cost to NTPC. The Contractor Will be totally responsible for any accident of the workers & he will bear all expenses of victim till recovery.
5. Normally cleaning/housekeeping is to be done in general shift. In addition to this, some manpower, as per the requirement, would be called in shifts (Morning/Evening/Night) for assisting in smooth functioning of the Main Plant Operation. Work has to be carried out throughout the year including Sundays/Holidays, the contractor will have to ensure weekly off to those workers who are doing duty in shift.
6. During the tenure of the contract, the agency shall deploy sufficient resources to carry out the work smoothly and effectively.
7. Deployment of munsis (SSW) under the contract is exclusively for supervision and monitoring of day to day activities of housekeeping work. In no case shall munsis be deployed or involved in the work like processing of gate pass of workers, preparation of monthly bill, keeping stores or bringing consumables T & Ps etc. from market.

8. High level of discipline is expected from all the personnel employed. The EIC reserve the right to restrict the entry of any personnel employed on this basis. The decision of EIC will be final.
9. The Contractor shall follow all the applicable labor laws and other regulatory rules for the time being in force.
10. Additional minimum 200mtr. heavy duty hose pipe of 1 inch dia is required for smooth operation of RC feeder during monsoon period.
11. Contractor / Agency has to provide / maintain the minimum quantity of following T&P during the contract period. The items have to be provided before start of work and may be Checked /verified by EIC/his representative at any point of time during contract period.

S. No.	Description of items	Quantity	S. No.	Description of items	Quantity
1.	Spade	30 Nos.	7.	PVC pipe	100 Mtr.
2.	Steel basket	30 Nos.	8.	Bucket (M) steel	6 Nos.
3.	Hose pipe (heavy duty) 1" dia	2000 M	9.	Hammer(2.5-3.0kg)	30 Nos
4.	Belcha	48 Nos.	10.	Bamboo rod 8 fit	24 Nos.
5.	Slide wrench	4 Nos.	11.	Bamboo rod 16 fit	16 Nos.
6.	Axe	10 Nos.			

Whenever new entry any T&P is there, the gate entry of the same to be submitted by the contractor.

12. Contractor / Agency has to provide the minimum following quantity of consumables for housekeeping / sanitation work, during the contract period, which will be verified by the EIC/his representative. The Gate entry of the consumable items will be submitted by the contractor-

S. No.	Description of items	Quantity	S. No.	Description of items	Quantity
1.	Broom stick with bamboo rod	16 Nos.	10.	Brush painting	12 Nos.
2.	Stick broom	500 Nos.	11.	Toilet brush	16 Nos.
3.	Flower broom	650 Nos.	12.	Naphthalene ball	25 Kg.
4.	Wiper	24 Nos.	13.	Phenol	150 Liter
5.	Wire brush	05 Nos.	14.	Odonil packet	350 packet
6.	Markin cloth	150 Mtr.	15.	Colin	24 Bottle
7.	Cotton waste /old cotton	175 Kg.	16.	Room freshener	20 Nos.
8.	Harpic (Toilet cleaner)	40 bottle	17.	Chemical Hand Gloves	20 Nos.
9.	Detergent powder	300 Kg.	18.	Liquid Hand wash	75 Liter

13. Labour / worker payment is to be done through Bank Account of the labour / worker.
 - The contractor shall pay minimum wages to bank account only within last day of each month to their personnel as per rules of Central/state Govt. whichever is higher.
 - Payment shall be done on actual execution of quantities based on certification. In case of partial area cleaning proportional quantity certification shall be done by area engineer/ EIC & payment shall be made as per proportionate certification.
 - Contractor has to submit monthly running bills based on certified quantity by area engineer. All required supporting documents also to be furnished for processing the bill. Running account bills of previous month shall be submitted by the contractor before 10th of subsequent month.

- Contractor must make labour payment before last day of each month as per labour rules otherwise a penalty of Rs. 3000/-per day for late payment beyond last day of month.
- 14. The contractor shall be fully responsible for payment of all taxes and compliance of labour laws applicable as per UP Government in force for their labourers engaged such as:**
- A.**
- The Contract Labour Act.
 - The Factory's Act.
 - The P.F. Act
 - The minimum wages Act.
 - The Workmen compensation Act
 - Inter State Migrant Workmen Act etc.
- B. Contractor has to pay the minimum wages per month to the labour as per the rate notified by Center/state whichever is higher from time to time.**
- C. Contractor has to take labour license, before commencement of work.**
- D. Each manpower should be insured under Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY). After submitting the documents payment shall be paid as per NTPC Policy.**
- 15. Safety clause:**
- The contractor should follow all safety rules as per NTPC guidelines and contractor should provide all necessary safety equipment's to workers like safety helmets, safety shoe, dust mask, ear plugs, gur, boiler suit for mill area workers etc.(with CISF gate entry). In addition to above contractor has to provide safety belt & all other safety appliances as & when required. The cost of which is deemed to be included in the scope of contractor.
 - The contractor should deploy a safety supervisor / officer as per state factory act. He has to brief the persons working in the area every day in the morning.
 - In absence of safety supervisor at site penalty of Rs. 1000/ day will be imposed and will be deducted from next RA Bill.
- 16. Price Adjustment Formula will be stipulated as under:**

Deployment of Unskilled (USW) Manpower :

For BOQ : 10.10, 10.20, 10.30, 10.90, 10.110, 10.120, 10.150, 20.10, 20.20, 20.30, 20.40, 20.50, 20.110, 20.140

$$E1 = E0 (0.15 + 0.85 \text{ WUSW1} / \text{WUSW0})$$

Where, E1 = Adjusted Value

E0 = Original award value/ Awarded price of BOQ Line Item(s)

WUSW1 = Revised Minimum Wages for USW (Unskilled Manpower) applicable as on date of Service/ Execution (as per notification by the appropriate Govt.)

WUSW0 = Minimum Wages of USW (Unskilled Manpower) applicable as on seven (7) days prior to the last date of submission of Bids (Price Bids)

Deployment of Semi-Skilled (SSW) Manpower :

For BOQ : 10.40, 10.130, 10.180, 20.60, 20.150, 20.180

$$E1 = E0 (0.15 + 0.85 \text{ WSSW1} / \text{WSSW0})$$

Where, E1 = Adjusted Value

E0 = Original award value/ Awarded price of BOQ Line Item(s)

WSSW1 = Revised Minimum Wages for SSW (Semi-skilled Manpower) applicable

as on date of Service/ Execution (as per notification by the appropriate Govt.)
WSSW0 = Minimum Wages of SSW (Semi-skilled Manpower) applicable as on seven (7) days prior to the last date of submission of Bids (Price Bids)

For BOQ : 10.80, 10.100, 10.140, 10.160, 10.170, 20.100, 20.120, 20.130, 20.160, 20.170, below mentioned formula shall be applicable.

$$E1 = E0 [0.20 + 0.80 \times W1 / W0]$$

Where, E1 = Adjusted Value

E0 = Original award value/ Awarded price of BOQ Line Item(s)

W1 = Revised Minimum Wages for USW (Unskilled Manpower) applicable as on date of Service/ Execution (as per notification by the appropriate Govt.)

W0 = Minimum Wages of USW (Unskilled Manpower) applicable as on seven (7) days prior to the last date of submission of Bids (Price Bids)

PVC Shall not be applicable for BOQ : 10.50, 10.60, 10.70, 20.70, 20.80, 20.90

17. Period of Contract: The duration of the contract is Twenty Four (24) months. The Contract may be extended for a period upto Three (03) months on same Terms and Conditions of the Contract. Engineer-In-Charge (EIC) reserves the right to foreclose the Contract before completion of extended time period.

18. Recovery of anticipated damages and deduction:

- a. In case any work is not executed as per the Scope of work and to the satisfaction of Engineer-In-charge, a deduction shall be imposed at double the rate of the job.
- b. The contractor has to ensure deployment of minimum manpower as mentioned in various sections of Part-A, Part-C & Part-D of the scope of work and also as required at a short notice at any point of time as per section-5 of Part-C. In case of deployment of less number of manpower a deduction equivalent to double (including the non-payment against the short fall) the wages for such short of manpower will be done from the RA bills of the contractor.
- c. If the contractor fails to clear/ dispose off the coal mill reject, fresh coal and debris as per Part-B of scope of work with in 24 hrs at a place instructed by EIC, a deduction of double the rate of job will be imposed and will be deducted from RA bill (s) .
- d. The contractor shall provide all necessary personal protective equipment such as Safety Shoes, Safety helmet, Safety belt, Gum boots, Nose mask, Ear muff and Hand gloves, boiler suit for mill area workers etc. (All personal protective equipment should be ISI Marked) for their workers, working under him. If any worker is found not using personal protective equipment, deduction will be made at @ Rs. 500/- per worker per occasion.
- e. In both Part – C&D in SOW Section - 1 is housekeeping of all working days and in both Part- C&D of SOW Section - 3 is housekeeping for Sundays & Holidays only.

19. The contractor should not deploy minor (below 18 yrs.) labours and female labours. The contractor should not deploy persons who are physically unfit or too old (>60 years) to

work. The contractor should deploy the required persons with adequate working knowledge to carryout day to day works. The contractor should ensure that proper permit to work (PTW) as & when required from respective area engineer.

20. Amount linked to Safety Aspects/ compliance to Safety Rules would be 2% amount from each month RAB will be retained & released in next quarter along with RAB certified by E.I.C based on 100 % compliance of
- a) Adherence to PPE and safety equipment's,
 - b) Imparting safety training for workers,
 - c) Medical and first aid amenities,
 - d) Adherence to work permits system of NTPC with regard to safety rules,
 - e) Compliance to clauses related to safety mentioned in the contract and as per NTPC safety rules.

If the agency fails to comply against the safety requirement, warning letter shall be issued to the agency by EIC/Safety Officer/ Area engineer. If more than two warning letters/notice are issued to an agency for any of the 05 items against the scope of work under contract in a quarter, then payment in that quarter shall be forfeited and shall not be payable to the contractor/agency. No interest shall be payable on the amounts linked to Safety Aspects / Compliance to Safety Rules including aforesaid retained amount.

21. The Contractor shall necessarily take Workmen Compensation Policy and Third Party Liability Policy. Value To be Insured - Total/ Aggregate amount during the currency of Contract: Rs. 50.00 Lakhs or '110% of Contract value (Excluding GST)' whichever is lower. For any one occurrence: 50% of Total aggregate amount.
22. The contractor shall be fully responsible for all risks involved, liabilities and obligations arising out of this contract under the provisions of law in force from time to time.
23. All deployed manpower should get annual medical health check-up done from an experienced medical practitioner at start of work & every year.

SPECIAL CONDITIONS OF CONTRACT REGARDING SAFETY

I. GENERAL

1. The contractors shall comply the provisions of Factories Act 1948, any other statutory provisions applicable to them to ensure occupational health and safety, NTPC Electrical & Mechanical Safety Rules and any other rules made by NTPC relating to Operation & Maintenance of Plants. The contractor shall make arrangements at all his work places for ensuring safety and absence of risks to health of the workers.

2. The contractor shall ensure that the equipments/electrical installation system/facilities are provided and maintained by him as required under various statutes. He shall also ensure testing/examination of the equipments wherever required, in accordance with the provisions of the Factories Act or any other prescribed statutes. The record of such inspection/testing and examination shall be kept at the site and shown to NTPC Engineer In-charge/Safety In-charge on demand.
3. The contractor shall ensure that all floors steps, stairs, passages and gangways are to be properly maintained and shall be kept free from obstructions and substances likely to cause persons to slip and fall.
4. The contractor shall not remove any part of equipments (like guards etc.) or gangways (like fencing, base etc.) or other systems without the permission of the Engineer In-charge. Wherever any guards/other parts of the system are removed for repair, it will be provided back to its place, before any operation or use of the equipment. The CONTRACTOR shall not hand-over/allow operating these equipments till the guards are provided at its place.
5. In case, any opening in gangway/access etc. is caused due to removing any part of base for lifting of material or otherwise, either the opening shall be suitably fenced or suitably covered to prevent fall of any person in such openings in consultation with Engineer In-charge. Temporary fencing shall also be provided whenever required along with appropriate caution boards, lighting etc.
6. The employees employed by the CONTRACTOR should be skilled/competent in accordance with the job requirement to the satisfaction of Engineer-in-Charge. Engineer-in-Charge shall have a right to remove any employee of the contractor, whom he feels to be incompetent. The contractor shall employ sufficient number of supervisors to ensure supervision at all places of his work at all the times.
7. No person should be allowed to carry, lift or move any load so heavy which may likely to cause him injury as prescribed under concerned state factories rules.

II. WORKING AT HEIGHTS

1. All working platforms, ways and other places of O&M work area shall be free from accumulations of any material causing obstructions and tripping.
2. Wherever workers are exposed to the hazard of falling into water, the contractor shall provide adequate equipment for saving the employees from drowning and rescuing from such hazards. The contractor shall provide boat or launch equipped with sufficient number of lifebuoys, life jackets etc. manned with trained personnel at the site of such work.
3. Every opening at elevation from ground level through which a worker, material, equipment etc. may fall at O&M work area shall be covered and/or guarded suitably by the contractor to prevent such falls.
4. Wherever the workers are exposed to the hazards of falling from height, the contractor shall provide full harness safety belts fitted with fall arresting systems to all the employees working at higher elevations and life line of 8mm diameter wire rope with turn buckles for anchoring the safety belts while working or moving at higher elevations. Safety nets shall also be provided for saving them from fall from heights and such equipments should be in accordance with BIS Standards.
5. Wherever there is a possibility of falling of any material, equipment or workers while working at heights, a suitable and adequate safety net should be provided. The safety net should be in accordance with BIS Standards.
6. The contractor shall provide proper access like ladders etc., where the workers are required to reach higher elevations and ensure the workers use them as an access for higher elevations where a permanent access is not available. The workers shall be provided with safety belts fitted with suitable fall arresting system (Fall arrestors) for climbing/getting down through ladders to prevent fall from height.

III. OPENINGS:

The contractor shall ensure that vessel, sump, tank, pit or opening in ground or in a floor which by reason of its depth, situation, construction or contains or may be a source of danger at his workplace shall be either securely covered or fenced and necessary measures for protection against falling materials/objects or workers from such platform are taken by providing suitable safety nets, safety belts or other similar means.

IV. FENCING OF MACHINERY:

The contractor shall not allow any worker to examine any part of the machinery or to carry out the lubrication or other adjusting operation while the machinery is in motion. The workers working near the machinery in motion shall be provided with tight fitting clothes as required under State Factories Rules.

V. SCAFFOLDINGS AND WORK PLATFORMS:

The contractor shall take all precautions to prevent any accidental collapse of scaffolding or working platforms or fall of persons from scaffolding or working platforms. The CONTRACTOR shall ensure that scaffolding erection and repairs are done under the expert supervising. The scaffolding shall meet the required strength and other requirement for the purpose for which the scaffolding work platform is erected. The material used for scaffold/work platform should conform to the BIS Standards.

VI. CONFINED SPACE

1. No person should be allowed to enter any chamber, tank, wet, pit, pipe, flue or other confined space at his work area in which any gas, fume, vapour or dust is likely to be present to such an extent as to involve risk to persons unless it is provided with a manhole of the required size or other effective means of **egress**. The contractor shall take practicable measures to remove any gas, fume, vapour or dust to bring it its limit within the permissible limits and to prevent any risk to the workers.
2. No portable electric light or any other electrical appliances of voltage exceeding 24Volts shall be permitted for use inside any chamber/tank wet, pit, pipe, flue or other confined space unless adequate safety devices are provided where the inflammable gases, fumes or dust is likely to be present.

VII. HANDLING OF HAZARDOUS CHEMICALS & HAZARDOUS WASTE

1. The contractor shall provide suitable personal protective equipments to the workers who are handling the hazardous and corrosive substances including alkalis and acids.
2. As a precautionary measure the contractor should keep the bottles filled with distilled water in cupboard/boxes near work place for emergency eye wash by worker exposed to such hazardous chemicals.

VIII. RIGHT TO STOP WORK

1. The Engineer-in-Charge shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipments. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly.
2. The contractor shall not be entitled for any damages/compensation for stoppage of work, due to safety reasons and the period of such stoppage of work shall not be taken as an extension of time for Completion of the Facilities and will not be the ground for waiver of levy of liquidated damages.

IX. OVERHEAD PROTECTION

1. The contractor shall ensure that any area exposed to risk of falling materials, articles or objects is roped off or cordoned off or otherwise suitably guarded from inadvertent entry of any person.
2. Wherever there is a possibility of falling of any material equipment or construction workers while working at heights, a suitable and adequate safety net should be provided. The safety net should be in accordance with BIS Standards.

X. EYE PROTECTION:

The contractor shall provide suitable personal protective equipment to his workmen depending upon the nature of hazards and ensure their usage by the workers engaged in operations like welding, cutting, chipping, grinding or similar operations which may cause injuries to his eyes.

XI. ELECTRICAL HAZARDS

1. The contractor should ensure that all electrical installations/equipments used in O&M work area comply with the requirements of latest electricity acts/rules.
2. The contractor shall take all adequate measures to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuits which may cause electrical hazards during the construction work. The CONTRACTOR shall provide the sufficient ELCBs/RCCBs for all the portable equipments, electrical switchboards, distributions panels etc. to prevent electrical shocks to the workers.
3. The contractor should ensure use of single/double insulated/plastic body hand tools or low voltage i.e. 110 Volts hand tools.
4. Wherever NTPC electrical & Mechanical Safety Rules prescribe, the CONTRACTOR shall not undertake any work till the permit is obtained for the specific work in accordance with NTPC rules.

XII. LIFTING TOOLS & TACKLES:

The contractor shall use the lifting appliances, tools & tackles including cranes etc. lifting gear including fixed or movable and any plant or gear, hoists, pressure plant and equipment etc. are in good condition and examined by competent person and certified as per statutory requirements.

XIII. MEDICAL EXAMINATION

1. The contractor shall get the medical examination conducted of all his employees including his sub-contractor employees working in hazardous areas once before the employment and thereafter once in every year by a qualified medical practitioner as per the Factories Act, 1948 and concerned State Factories Rules. The necessary registers and records relating to the medical examination of all the employees should be maintained and shown to NTPC Engineer in-Charge/Safety-in-Charge on demand.
2. If the contractor fails to get the medical examination conducted as mentioned above, NTPC will have the right to get the same conducted by NTPC Medical Officer with intimation to the CONTRACTOR and deduct the cost and overhead charges.

XIV. SAFETY ORGANISATION:

The major O&M contractors who are deploying number of agencies under his control should appoint at least one qualified safety officer. The other terms with respect to appointment of number of safety officers, qualifications, experience, duties and responsibilities etc. shall be in accordance to the concerned State Factories rules. The other contractors site Incharge who is directly supervising the job should undergo minimum two days safety training at any reputed institute or at NTPC training centre before start of work and obtain the certificate. A copy of the certificate has to submit to Engineer-in-Charge of NTPC.

XV. REPORTING OF ACCIDENTS

1. In case of any injury, the contractor shall send the injured person to NTPC Plant Hospital/Dispensary/First Aid Centre, where the injured shall be given the first aid treatment and the quantum of permanent disablement/temporary disablement shall be assessed to ensure payment for compensation to be paid, by the contractor to the victim.
2. In case the subsequent treatment is given in other than NTPC Hospitals, the contractor shall submit full information about the treatment of injured persons including his address etc. till the injured persons is certified fit by any Govt./NTPC Doctor. He shall submit such record to NTPC Safety Deptt. within 15 days of certified fit by Doctor as above.

3. The contractor shall report immediately about the serious injury/ fatality in his work area to the local police station, District Magistrate, Safety Officer-in-Charge and Engineer-in-Charge. Within 2 hours of occurrence he shall submit full details of accident in writing to Safety Officer-in-Charge and Engineer-in-Charge on the prescribed format. In case of near miss accidents/minor injury, he shall report the same to Safety Officer In charge and Engineer In charge immediately after referring the injured to NTPC Plant Hospital/Dispensary/First Aid Centre.
4. Whenever asked by NTPC, the contractor shall send his employees to depose in any enquiry arising out of any injury/fatality/loss etc. without any reservation.

XVI. PERSONNEL PROTECTIVE EQUIPMENTS

1. The contractor shall provide safety helmets to all his employees including contractor labour of his sub contractor to prevent a danger of falling object. Whenever any worker is engaged on a work at a place from which he is liable to fall more two meters shall be provided with Safety belt equipped with lifelines, which are secured to a fixed structure. A competent person to ensure that no belt or lifeline that is not in good condition is used shall examine all safety belts and lifelines at frequent interval.
2. Where the workers are exposed more than to the noise levels specified in the concerned State Factories Rules be provided with suitable ear plugs/ear muffs so as to reduce the exposure below high noise level.
3. Personal Protective Equipments as prescribed in the Factories Act and /or State Factories Rules, the CONTRACTOR shall provide to the workers. In case the Factories Act/State Factories Rules do not specify the personal protective equipments for the concerned work, the personal protective equipments prescribed by NTPC Engineer-in-Charge shall be provided by the CONTRACTOR. The quality of the personal protective equipments shall be as prescribed in concerning Indian Standards. In case, the Indian standards do not exist for particular personal protective equipment, the approval of quality shall be obtained from Engineer-in-Charge/Head of Safety. It will be the responsibility of CONTRACTOR to ensure that all his employees use these equipments without fail.
4. In case NTPC officials find that the employees of contractors working in NTPC without use of appropriate safety equipments(personal protective equipments) NTPC shall have a right to issue the equipment to the workers with intimation to the contractor and deduct the cost and overhead charges as mentioned in the terms of the contract.
5. NTPC may provide special personnel protective equipments, like fall arrestors, safety nets etc. on chargeable/non chargeable basis, subject to availability to the petty contractors on his request to Engineer-in-Charge in advance indicating total no. of items quantity and type of equipments required provided this condition is specifically included in the contract conditions.

XVII. TRAINING

1. The contractor shall arrange to provide safety training to all his employees. Whenever asked by NTPC also, the contractor shall send his employees for safety training and for such day the contractor shall pay the employee average daily salary.
2. The contractor shall provide training on use of fire extinguishers and first aid to all his employees and records thereof shall be submitted to Engineer-in-Charge and head of Safety of NTPC. The training may be provided independently or may be nominated to the programmes being organized by NTPC from time to time.

XVIII. PENALTIES

1. If the contractor fails in providing safer working environment as prescribed in General Conditions of Contract relating to safety and health or continue the work even after being instructed to stop the work by Engineer-in-Charge, the contractor shall be penalise @ Rs.5000/-per day or part thereof till the instructions are complied with and so certified by the Engineer-in-Charge. However, in case of accident causing major injury or fatal, the provisions contained below shall also apply in addition to the penalties mentioned in this clause.

2. If the contractor does not take all safety precautions and/or fails to comply with the Safety rules as prescribed by the Employer or under the applicable law for the safety of the plant and equipment and for the safety of personnel and the contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other contractors, or the Employer's employees or any other person who are at the site or adjacent thereto, the contractor shall be responsible for payment of penalty to NTPC as per the following schedule:-

a)	For fatal accident/injury causing death	Penalty @ 10% of the contract value or Rs.5.0 lacs whichever is less for each fatal accident/injury causing death
b)	Major injury or accident causing 25% or more permanent disablement to workmen	Penalty @ 2.5% of contract value or Rs.1.00 lac whichever is less for each disablement injury.

3. Permanent disablement shall have the same meaning is indicated in Workmen's Compensation Act 1923. The penalty mentioned above shall be in addition to the compensation payable to the workmen/employees under the relevant provisions of the workmen's compensation act and rules framed there under or any other applicable laws as applicable from time to time.
4. IF any contractor worker found working without using the safety equipment like safety helmet, safety shoes, safety belts etc. or without anchoring the safety belts, while working at height the Engineer-in-Charge/Safety Officer of NTPC shall have the right to penalise the contractor for Rs.200/-per person per day and such worker shall be sent out of the workplace immediately and shall not be allowed to work on that day. Engineer-in-Charge/Safety officer of NTPC may also issue a notice in this regard to the contractor.